CANADIAN Social Trends

Catalogue no. 11-008
No. 92 Winter 2011

Winter 2011

Features

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Statistique Canada

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Winter 2011 No. 92

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Canadian Social Trends

January 2012

Published by authority of the Minister responsible for Statistics Canada

Indexed in the **Academic ASAP, Academic Search Elite, Canadian Periodical Index, Canadian Serials, Expanded Academic ASAP, PAIS International, Periodical Abstracts, Periodical Abstracts Research II, ProQuest 5000, Proquest Research Library** and available on-line in the **Canadian Business and Current Affairs Database**.

ISSN 0831-5698 (Print)
ISSN 1481-1634 (Electronic)

Cette publication est également disponible en français.

CANADIAN Social Trends

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Cover photograph
Carol Noël

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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0^s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p}	preliminary
^{r}	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E}	use with caution
F	too unreliable to be published

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Recent evolution of immigrant-language transmission in Canada

by René Houle

Introduction

Immigrant-language transmission is one element of the settlement process for immigrant communities in Canada. Like religion, language of origin can be a marker of ethnicity, and can provide socioeconomic advantages like access to certain goods and services offered by or for the immigrant community. Immigrant children's academic success is associated with maintaining one's language of origin and ethnic loyalties. The survival of immigrant languages and their intergenerational transmission in this country are also issues related to Canadian multiculturalism. Both the *Canadian Multiculturalism Act* and the preamble to the *Official Languages Act* state that Canada should encourage the preservation of foreign languages and enhance their status and use. Immigrant-language transmission in Canada is not greatly different from the situation in the United States. In that country, studies show that the knowledge and use of immigrant languages have nearly disappeared in favour of English among third-generation adults,[1] if not the second.[2] In Canada, studies show slightly more balanced outcomes. While immigrant groups of European origin have had more difficulty preserving their language over time, more recent immigrant groups, such as those who speak Spanish, Chinese or Punjabi, are generally more likely to maintain theirs.[3]

Several factors influence whether immigrant languages are passed on from one generation to another. The most important factor is the extent to which children are exposed to those languages within the family.[4] Exposure to one's immigrant language can also occur outside the home, and through contact with other children who are also exposed to those languages and various learning activities organized by language communities,[5] as well as through greater contact with other people with the same mother tongue. From this perspective, the fact that most immigrants who settled in Canada since the end of the Second World War were family immigrants has definitely had a positive effect on the vitality of immigrant languages. In all cases, it is primarily through adults, especially mothers, that language is passed on to children.

In this article, we look at how immigrant-language transmission evolved between 1981 and 2006. First, a comparison of the situation between two censuses spaced 25 years apart. This is a historical comparison of two populations defined identically as immigrant mothers with Canadian-born children under 18 years of age. Did language transmission increase or decrease during this period? To what extent did the various factors involving exposure to the languages influence this change?

Second, we examine the intergenerational dimension of the transmission of immigrant languages between immigrant mothers who, in the 1981 Census, had Canadian-born children under 18 years of age compared to their daughters 25 years later (2006) who were between 25 and 42 years of age and were mothers themselves (see "What you should know about this study" for more information on the methods, concepts and definitions).

In 2006, the four immigrant languages transmitted most often were Armenian, Punjabi, Bengali and Urdu

Language transmission differs greatly from one language group to another (Table 1). For some language groups (Dutch, Italian, Creole and Tagalog), transmission of the mother's mother tongue to children under 18 years of age, either as a mother tongue or as a language spoken most often or on a regular basis at home, does not

What you should know about this study

This article examines parent–child language transmission among immigrants whose mother tongue is a language other than English, French, an Aboriginal language or a sign language. For the purposes of this study, these other languages are designated 'immigrant languages.' Immigrant languages not specified are also excluded from the analyses.

The data are drawn from the long forms of the 1981 and 2006 censuses, which were completed by 20% of Canadian households. Persons living in collective dwellings are excluded. All estimates were weighted to represent the overall population of the language groups studied.

To examine how language transmission evolved, immigrant women from 1981 are compared to those from 2006 by measuring the proportion of their Canadian-born children under 18 years of age with the same mother tongue. The population of children is limited to those born in Canada since the circumstances of transmission for children who came to Canada with their mothers are quite different.

The intergenerational approach compares mothers in 1981 to their adult Canadian-born daughters 25 years later, in 2006. To make the comparison as accurate as possible, only mothers aged 25 to 42 at the time of the 2006 Census, who were daughters under 18 years of age in 1981, are included. Women aged 25 to 42 who were born in Canada to immigrant mothers and who did not have an immigrant language as their mother tongue are excluded.

Only single responses to the mother tongue question were retained, since multiple responses given in 1981 could not be used because they were incomplete. This limits the study, since a portion of the women who have both an immigrant language and one of Canada's two official languages as their mother tongue (8% of immigrant women in the 2006 Census) are excluded from the analyses. The implications of this exclusion were small in 2006, as the intensity of immigrant-language transmission from immigrant mothers with Canadian-born children under 18 was 56% when multiple-responses were included and 55% when they were excluded.

The language groups used in this analysis were created using the mother-tongue categories specified in the census. Categories like Slavic languages not included in the specified languages (Russian, Ukrainian, Serbian, etc.) are therefore excluded. For the historical comparison, the analysis is limited to groups with at least 200 women, before weighting, from the specified language group in 1981 and 2006. However, a residual category including all other specified languages was created. For the intergenerational comparison, the number-of-women criterion was lowered to 150 to obtain a slightly larger range of language groups, since fewer daughters than mothers have an immigrant mother tongue.

Multivariate analysis

The intensity of language transmission is calculated as the proportion of children whose mother tongue is the same as that of their mothers. Since this is a proportion, logistic regression analysis was chosen for modelling.

Four types of models were developed. Model 1 isolates the census year's effect in relation to the linguistic group's effect on the probability of language transmission. This model compares the evolution of each linguistic group between 1981 and 2006 by holding the other variables constant. Model 2 isolates the census year's effect on language transmission by taking the other variables into account, including the linguistic group. Model 3 isolates the census year's effect on language transmission without taking other variables into account (non-controlled). Finally, model 4 is specific to each census year. It determines each variable's effect on language transmission by holding the other variables in the model constant. The factors used in the regressions are grouped as follows: sociodemographic characteristics, namely the children's sex and age, as well as the mother's age and level of education; characteristics of the union, family or household, including the mixed nature of the union (according to the mother-tongue of each partner); the mother's migratory characteristics like period of immigration and age on arrival in Canada; and the context variables that serve to describe the geographic area. The context variables refer to three census division characteristics: namely adult population for each mother tongue, recent-immigrant population (10 years or less of residence in Canada), and bilingual population. In all three cases, the percentage for each population within the total adult population was calculated. These variables are substituted for those for the province or census metropolitan area.

exceed 20%. Conversely, the intensity of language transmission is very high for the Armenian, Punjabi, Chinese, Persian, Turkish, Bengali and Urdu groups, among which it exceeds 70%. However, for some languages, such as Portuguese, Greek, Creole and Hindi, the percentages of those who report that they can speak the language are much higher than the percentages who report the language as a mother tongue or a language spoken at home.

The intensity of immigrant-language transmission is generally on the rise

For all language groups, in the 1981 Census, immigrant languages were passed on to 41% of Canadian-born children under 18 years of age. In the 2006 Census immigrant languages were passed on to 55% of Canadian-born children in this age group—an increase of 14 percentage points from 1981 (Table 2). The intensity of immigrant-language transmission increased in the majority of the 20 language groups. The exceptions were primarily European languages (Portuguese, Italian, Greek, Czech), for which there was a decrease, as well as Tagalog and Armenian, which were passed on as often in 1981 as 2006.

Between 1981 and 2006, the composition of immigration changed considerably, and the changes may have had a major impact on the intensity of immigrant-language transmission. The same changes were evident for women's socioeconomic profile in relation to their education level, the linguistic tradition of the country where they were born (according to the status of English and French in that country), and the mother-tongue groups to which they belonged. For example, in 1981, 7% of mothers had a university degree, compared to 28% in 2006. In 1981, 13% of mothers came from a country where French or English had special status, compared to 53% in 2006, with 40% for English and 13% for French.[6]

Table 1 Proportion of children aged less than 18, born in Canada, with the same mother tongue, same language spoken at home or some knowledge of their mother's mother tongue, 2006

Mother's mother tongue	Child's language			Mother's mother tongue	Child's language		
	Same mother tongue	Mother's mother tongue spoken at home[1]	Some knowledge of the mother's mother tongue		Same mother tongue	Mother's mother tongue spoken at home[1]	Some knowledge of the mother's mother tongue
	percentage				percentage		
Dutch	15	13	20	Somali	48	54	62
German	43	41	48	Akan (Twi)	21	27	37
Portuguese	35	38	48	Persian (Farsi)	71	70	79
Spanish	53	62	70	Pundjabi (Pandjabi)	81	80	89
Romanian	64	65	71	Gujarati	64	59	69
Italian	20	16	30	Sinhala (Sinhalese)	24	29	31
Greek	42	45	59	Hindi	50	51	65
Armenian	75	72	77	Urdu	76	76	84
Russian	64	62	68	Bengali	73	76	82
Serbo-Croatian[2]	62	65	72	Malayalam	32	37	44
Czech	21	25	29	Tamil	65	72	81
Polish	64	64	72	Japanese	52	64	67
Ukrainian	66	63	72	Korean	54	55	60
Slovak	38	38	47	Chinese[3]	70	71	78
Hungarian	43	40	48	Lao	37	37	48
Creoles	12	21	39	Vietnamese	61	63	70
Turkish	69	70	76	Khmer (Cambodian)	40	40	49
Arabic	55	62	71	Tagalog (Pilipino)	15	16	22
Hebrew	33	33	48	Ilocano	9	8	10
Amharic	27	30	36	Other languages	31	33	37

1. Language most often or regularly spoken at home.
2. Includes Croatian, Serbian, Serbo-Croatian and Bosniac.
3. Chinese languages: Chinese (not otherwise specified), Mandarin, Cantonese, Hakka, Chaochow (Teochow), Fukien, Shanghainese and Taiwanese.

Source: Statistics Canada, 2006 Census of Population.

Table 2 Immigrant-language transmission, children aged less than 18, born in Canada, 1981 and 2006

Mother's mother tongue	Children with same mother tongue as their mothers		Odds of having same mother tongue as mother	
	1981†	2006	1981†	2006
	percentage		odds ratio[3]	
Dutch	3	15*	0.022	0.249*
German	24	43*	0.230	0.632*
Portuguese	56	35*	0.295	0.362
Spanish	41	53*	0.296	0.778*
Italian	52	20*	0.292	0.229*
Greek	62	42*	0.372	0.674*
Armenian	78	75	1.346	2.425*
Serbo-Croatian[1]	51	62*	0.345	1.013*
Czech	37	21*	0.306	0.445
Polish	34	64*	0.350	1.196*
Ukrainian	44	66*	1.033	1.929*
Hungarian	27	43*	0.224	0.817*
Arabic	30	55*	0.131	0.349*
Pundjabi (Pandjabi)	64	81*	0.602	1.950*
Hindi	29	50*	0.150	0.696*
Urdu	44	76*	0.248	1.362*
Japanese	34	52*	0.220	2.390*
Korean	32	54*	0.109	0.645*
Chinese[2]	61	70*	0.462	1.000*
Tagalog (Pilipino)	12	15	0.066	0.112*
Other languages	26	52*	0.247	0.498*
Year's effect	...	...	1.000	2.312*
Year's effect (non-controlled)	41	55*	1.000	1.777*

† reference year

* statistically significant difference from the reference year at $p < 0.01$

1. Includes Croatian, Serbian, Serbo-Croatian and Bosniac.
2. Chinese languages: Chinese (not otherwise specified), Mandarin, Cantonese, Hakka, Chaochow (Teochow), Fukien, Shanghainese and Taiwanese.
3. The odds ratios related to the language groups are from model 1. The odds ratios related to the year's effect stem from models 2 and 3. See "What you should know about this study."

Source: Statistics Canada, 1981 and 2006 Censuses of Population.

In terms of mother tongue, in 1981, the distribution was dominated by European languages, whereas the situation was completely different 25 years later, when people with Asian (Chinese, Tagalog, Punjabi, Arabic) and Latin American (Spanish) mother tongues accounted for the majority of immigrants.

Using logistic regression models, it is possible to examine how language transmission evolved between 1981 and 2006 for the different language groups, taking several factors that influence the chances of transmission into account. The results of the regressions confirm that immigrant-language transmission increased between 1981 and 2006 for most groups (Table 2). Just one group (Italian) saw its language transmission decline between the two censuses and for two groups (Portuguese and Czech) the intensity of the phenomenon remained stable over the period. In all three cases, the immigrant groups had been long-settled in Canada.

Controlling for other variables increases the intensity of language transmission. That is, when other characteristics were held constant, the difference between the intensity of language transmission between the two censuses was larger than the raw percentages would indicate. This is largely the result of the increase in the mothers' education level, which had the effect of reducing language transmission, since more-educated women are less likely to pass on their mother tongue to their children. In

other words, the immigrant-language transmission, already stronger in 2006 than in 1981, would have been even more so if mothers' education profile had remained unchanged (Table 2).

From one generation to another living in Canada, immigrant-language transmission declines

To study how intergenerational language transmission has changed over time, mothers in 1981 were compared with their daughters who had become mothers 25 years later, in 2006 (see "What you should know about this study"). The intensity of intergenerational language transmission moved in the opposite direction from historic transmission. Whereas 41% of mothers passed on their language in 1981, the corresponding proportion for their daughters 25 years later was only 23%, a decrease of 18 percentage points[7] (Table 3). It is the 'marriage market,' more than any other factor, that determines how intergenerational language transmission changes over time. As many studies have documented, forming an exogamous union[8] considerably reduces immigrant-language transmission. Canadian-born daughters of immigrant mothers are exposed to a marriage market dominated by a large demographic pool of potential partners with English or French as their mother tongue who do not know the immigrant language.

This downward trend was observed for nine language groups, including the Italian, Greek and Chinese groups. The pattern was stable for the Punjabi group. Furthermore, the language transmission of second-generation women to their children is the strongest for those whose mother tongue was Punjabi (53%), followed by those whose mother tongue was Greek (41%) and Spanish (30%).

Daughters have a different life than their mothers

Many characteristics of mothers in 2006 were different from those of their own mothers 25 years earlier. Apart from the fact that mothers with children in 2006 were on average younger than their own mothers in 1981, it was mainly the education level and the endogamous or exogamous nature of unions that changed. In 1981, nearly 60% of mothers had no diploma, whereas in 2006, only 4% of their adult daughters were in this situation. Conversely, 7% of mothers had a university degree in 1981, compared to 35% of their adult daughters in 2006. Also in 2006, 55% of their daughters, all second-generation and therefore born in Canada, were living in an exogamous union, in most cases with a spouse with English or French as his mother tongue, whereas in 1981 the majority of mothers (79%)

Table 3 Language transmission from immigrant mothers in 1981 to their daughters aged 25 to 42 in 2006 and their children aged less than 18, born in Canada, 1981 and 2006

Mother's mother tongue	Children with same mother tongue as their mothers		Odds of having same mother tongue as mother	
	1981†	2006	1981†	2006
	percentage		odds ratio[3]	
German	24	19*	1.236	1.454
Portuguese	56	14*	1.976	0.693*
Spanish	41	30*	2.000	3.600
Italian	52	21*	1.487	0.489*
Greek	62	41*	2.119	1.884
Serbo-Croatian[1]	51	24*	2.497	3.097
Polish	34	17*	2.017	2.654
Hungarian	27	10*	1.357	2.750
Pundjabi (Pandjabi)	64	53	3.259	3.044
Chinese[2]	61	22*	2.751	1.000*
Others	19	23*	0.636	2.140*
Year's effect	...	...	1.000	0.644*
Year's effect (non-controlled)	41	23*	1.000	0.444*

† reference year
* statistically significant difference from the reference year at $p < 0.01$
1. Includes Croatian, Serbian, Serbo-Croatian and Bosniac.
2. Chinese languages: Chinese (not otherwise specified), Mandarin, Cantonese, Hakka, Chaochow (Teochow), Fukien, Shanghainese and Taiwanese.
3. The odds ratios related to the language groups are from model 1. The odds ratios related to the year's effect stem from models 2 and 3. See "What you should know about this study."

Source: Statistics Canada, 1981 and 2006 Censuses of Population.

had a spouse whose mother tongue was the same as theirs. Another key difference is that unlike their immigrant mothers, the daughters who had become mothers in 2006 had spent their entire childhood and adolescence in Canada. The social and cultural context of childhood can have a lasting influence on values and behaviours, including the desire to pass on one's mother tongue. The other characteristics of the two groups of women were fairly similar. When these characteristics were taken into account, the picture of how intergenerational transmission has evolved changes substantially. While a decrease is still observed between 1981 and 2006 for all language groups, it is more accurate to speak of stability for most language groups (Table 3).[9]

Just as for historical change, holding the influence of other factors constant results in an increase in the intensity of language transmission. However, the explanation is different: it is no longer only the education level that reduces intergenerational transmission, but also the endogamous or exogamous nature of the couple. The latter factor alone explains almost all the difference in the intensity of intergenerational transmission between mothers in 1981 and their daughters in 2006 (Table 3).

Very few grandchildren of 1981 immigrant mothers had the same mother tongue as their grandmothers

To determine the transfer of language over three generations, the change in the rate of language transmission between generations must be examined. In 1981, 41% of women had passed on their mother tongue to their children. A quarter century later, in 2006, 23% of first-generation immigrant women who had been transmitted their own mother's mother tongue would in turn have passed it on to their own children. In all, 10% (or 41% multiplied by 23%) of the grandchildren of the 1981 first-generation immigrant mothers would have the same mother tongue as their mother and grandmother.

Two language groups stand out from the others from the standpoint of intergenerational transmission. In the Punjabi group, one-third of the grandchildren of 1981 women would have their grandmother's mother tongue, whereas in the Greek group, the proportion would be one-quarter (Table 4). The latter result is noteworthy in that Greek-speaking people comprise a population that has been settled in Canada for a relatively long time. In contrast, the intensity of transmission to the third generation would be below the 10% level for the German, Portuguese, Polish and Hungarian language groups, which are also long-settled groups. One factor explaining the difference between the language groups is the level of endogamy (with respect to mother tongue) in the second generation. Thus the proportion of endogamous couples for Canadian-born women with Punjabi or Greek as their mother tongue would be 83% and 56%, respectively. However, the endogamy level would also be fairly high for women in the Italian (55%), Portuguese and Chinese (46%) groups, for whom intergenerational language transmission to the third generation is considerably lower than for women in the first two groups (data not shown).

Many factors influence immigrant-language transmission

Besides language, there are many supplementary variables associated with the probability of transmitting a language (Table 5). First, being a male child reduces the probability of the mother's mother tongue being passed on, both in 1981 and 2006. The effect of the children's sex is nearly the same in 1981 as in 2006, although the reason for this difference between girls and boys is uncertain. Children's age is also related to language transmission, especially in 2006: the older the child, the lower the intensity of language transmission tends to be.

Table 4 Extinction table of immigrant languages as mother tongues from first to third generation in Canada, 1981 and 2006

Mother's mother tongue	Generation		
	First	Second	Third
	percentage		
German	100	24	5
Portuguese	100	56	8
Spanish	100	41	12
Italian	100	52	11
Greek	100	62	26
Serbo-Croatian[1]	100	51	12
Polish	100	34	6
Hungarian	100	27	3
Pundjabi (Pandjabi)	100	64	33
Chinese[2]	100	61	14
Total	100	41	10

1. Includes Croatian, Serbian, Serbo-Croatian and Bosniac.
2. Chinese languages: Chinese (not otherwise specified), Mandarin, Cantonese, Hakka, Chaochow (Teochow), Fukien, Shanghainese and Taiwanese.

Source: Statistics Canada, 1981 and 2006 Censuses of Population.

Table 5 Odds of mother transmitting her mother tongue to her Canadian-born children less than 18 years of age, 1981 and 2006

	1981			2006		
	Odds ratio	Confidence interval at 99%		Odds ratio	Confidence interval at 99%	
		Lower limit	Upper limit		Lower limit	Upper limit
	odds ratio					
Child's sex						
Female†	1.00	...	...	1.00	...	...
Male	0.95*	0.92	0.99	0.93*	0.90	0.97
Child's age						
5 years or less†	1.00	...	...	1.00	...	...
6 to 12 years	0.93*	0.88	0.98	0.84*	0.80	0.89
13 to 17 years	1.04	0.97	1.12	0.93	0.86	1.00
Age of mother at census						
15 to 24 years	1.28*	1.10	1.48	1.41*	1.15	1.73
25 to 34 years†	1.00	...	...	1.00	...	...
35 to 44 years	1.00	0.92	1.09	0.83*	0.76	0.89
45 years or more	1.10	0.97	1.24	0.76*	0.68	0.85
Highest diploma of mother						
No diploma	1.52*	1.33	1.73	1.45*	1.32	1.59
High school diploma or apprenticeship	1.16*	1.01	1.32	1.07	0.99	1.15
College, CEGEP	1.03	0.88	1.21	0.95	0.88	1.03
University†	1.00	...	...	1.00	...	...
Mother in a common-law union						
No†	1.00	...	...	1.00	...	...
Yes	0.85	0.57	1.26	0.86*	0.75	0.99
Preschool children (aged 5 or less) in the family						
Each additional preschool child in the family	1.24*	1.18	1.31	1.09*	1.03	1.14
Presence of persons who know neither English nor French in the household						
No†	1.00	...	...	1.00	...	...
Yes	1.25*	1.11	1.40	1.29*	1.14	1.46
Mixed union on the mother tongue criteria						
Both partners have the same mother tongue†	1.00	...	...	1.00	...	...
Each partner has a different mother tongue (immigrant language)	0.10*	0.08	0.12	0.13*	0.12	0.15
Each partner has a different mother tongue (English or French)	0.05*	0.05	0.06	0.05*	0.05	0.06
Mother's arrival period in Canada						
26 years or more before the census†	1.00	...	...	1.00	...	...
Between 16 and 25 years before the census	1.45*	1.30	1.61	1.40*	1.23	1.58
Between 11 and 15 years before the census	1.74*	1.52	1.99	1.68*	1.46	1.94
Between 6 and 10 years before the census	2.10*	1.78	2.48	1.83*	1.56	2.15
5 years or less before the census	2.75*	2.26	3.34	2.38*	1.99	2.83
Age of mother at arrival in Canada						
Less than 6 years old	0.92	0.77	1.10	0.67*	0.56	0.81
Between 6 and 12 years old	0.88*	0.77	1.00	0.69*	0.60	0.79
Between 13 and 18 years old	0.95	0.87	1.03	0.95	0.86	1.05
19 years or older†	1.00	...	...	1.00	...	...

Table 5 Odds of mother transmitting her mother tongue to her Canadian-born children less than 18 years of age, 1981 and 2006 (continued)

	1981			2006		
	Odds ratio	Confidence interval at 99%		Odds ratio	Confidence interval at 99%	
		lower limit	upper limit		lower limit	upper limit
	odds ratio					
Linguistic tradition in mother's country of birth						
Neither English nor French†	1.00	...	...	1.00	...	...
English (or English and French)	0.78*	0.67	0.91	0.62*	0.57	0.68
French	1.13	0.92	1.38	0.70*	0.63	0.77
Percentage of the population by mother tongue in census division where mother lives						
Increase of 1% of population with same mother tongue as mother	1.06*	1.05	1.07	1.01	1.00	1.02
Percentage of recent immigrants (in Canada 10 years or less) in the census division where mother lives						
Increase of 1% of recent immigrants in the census division	1.02*	1.01	1.03	1.02*	1.01	1.02
Percentage of officially bilingual people in census division where mother lives						
Increase of 1% of bilingual persons in the census division	1.03*	1.02	1.03	1.01*	1.01	1.01

† reference group
* statistically significant difference from the reference group at $p < 0.01$
Source: Statistics Canada, 1981 and 2006 Censuses of Population.

Also, the youngest mothers have the greatest propensity to pass on their mother tongue. The reason for this is unclear, but it is possible that women who bear children at a younger age are more likely to exhibit 'traditional' values and practices typical of their country of origin and are therefore more likely to pass on their mother tongue.

Education level has a notable influence on language transmission: the latter tends to decline as the former rises. Such a result is possibly related to the concerns and abilities of the most educated parents to optimize their children's chances for success in Canada by adopting and transmitting English or French as the home language.[10] However, the effect of education in 2006 needs to be qualified; in that year, the effect of a diploma was seen only for mothers with no diploma, who comprised only 15% of all mothers included in the analysis.

Mothers in common-law unions were less likely to pass on the immigrant language than married mothers in 2006, but not in 1981, a year when such unions were still relatively uncommon in Canada. Common-law unions are a less traditional family framework than marriage, and immigrant-language use might therefore be less widespread in them. Some have hypothesized that marriage is a form of pairing that is more conducive than common-law union to the involvement of the spouses' extended families, since common-law unions might be frowned upon in some groups from societies where traditional family values are very strong and where intergenerational ties are codified.[11]

The composition of families or households is closely linked to language transmission. The presence of preschool-aged children (first- or second-generation children) in the family and the presence of adults who know neither English nor French within the household are two factors positively associated with language transmission. The presence of persons within the household who know neither English nor French increases the use of the immigrant language.[12] It seems likely that this effect is also felt within a language community when many members are not proficient in the language of the majority.[13] Also, parents are more likely to use their mother tongue when there are preschool-aged children in the home.[14]

Marrying a person who does not speak the same language is the main factor reducing the intensity of immigrant-language transmission

Whether a union is endogamous or exogamous is of paramount importance for language transmission. Both parents having the same mother tongue increases transmission markedly.[15]

Mothers' migration characteristics form a group of characteristics that are also strongly associated with language transmission. The immigration period is particularly crucial: the propensity to transmit one's mother tongue weakens as the length of residence in Canada increases.

Also, women who arrived before or during adolescence integrate into the host society economically and linguistically more easily than their parents. Their knowledge of the official languages is better than that of their parents, and it seems likely that some of them will choose not to transmit their mother tongue to their children. The results validate this explanation only for 2006, where the intensity of transmission was lower for women who came to Canada before age 13, that is, before having begun high school.

Coming from a country where one of the official languages is French or English leads to the gradual adoption of one of Canada's official languages

A number of countries, because of their history, have English or French as an official, national or historical language. Women from these countries are more likely than others to have adopted English or French at home or to have a very good knowledge of these languages. As a result, they are also more likely to have passed on one of Canada's official languages to their children. According to our findings, the fact that a mother is born in a country with an anglophone tradition reduces the propensity to transmit her immigrant mother tongue, in both 1981 and 2006. The corresponding effect in the case of a mother born in a country with a francophone tradition is seen only in 2006, where the effect is the same as for English.[16]

The factors relating to exposure to languages spoken outside the family also had a significant effect on language transmission, especially in 1981. The size and concentration of language groups were directly correlated with language transmission in 1981, while the effect was much less evident in 2006. The effect of this 'communal' or 'ecological' factor on language retention has been observed for different immigrant language groups in the United States[17] and for official-language minority groups in Canada.[18] Such concentrations offer opportunities to practise these languages, whether through informal contact among families, in more formal learning activities designed for school-aged children, or in connection with cultural or religious community institutions, media and activities.

The arrival of new speakers of an immigrant language helps to keep it alive

In addition, the steady influx of new immigrants had a positive influence on the transmission of immigrant mother tongues, both in 1981 and 2006. These new immigrants generally do not have as good knowledge of the official languages and tend to concentrate in cities and form 'ethnic' neighbourhoods where the use of English and French is less widespread and may be seen as less essential in everyday life.

In Canada, there have also been specific regional effects that do not appear to be related to the geographic concentration of language groups. Thus, the greatest transmission of immigrant-languages is in Quebec,[19] whereas the largest concentrations of immigrants in Canada are in Ontario and British Columbia, especially in Toronto and Vancouver. The reasons cited to explain this situation in Quebec are generally related to Quebec's unique linguistic complexity (English dominant in North America, French the official language of Quebec, extensive multilingualism among immigrants' children[20]). This suggests that decisions concerning language transmission to children may be influenced by the coexistence of French and English in public in Montréal. Our models include a contextual measure of French–English bilingualism, whose effect on immigrant-language transmission was positive and significant both in 1981 and 2006. The psycho-social mechanism underlying these linguistic behaviours has yet to be documented. However, results not shown indicate that the effect of bilingualism disappears when a variable representing the metropolitan area of residence is added.

Summary

The evolution of intergenerational language transmission between 1981 and 2006 shows a certain persistence of immigrant languages in Canada in a strong migratory-flow context. In general, recently arrived female immigrants from South America, Asia and the Arab world tend, with a few notable exceptions like the Tagalog group from the Philippines, to pass on their language of origin to a sizeable proportion of their Canadian-born children. But these new immigrants are not necessarily different from the immigrant women of European origin who preceded them. They differ from them in that their arrival in Canada is recent. But they resemble them in that their endogamy level is similar: the proportions of women paired with a man of the same mother tongue in the Italian, Greek, Portuguese, Serbo-Croatian and Armenian groups in 1981 are comparable to those in the Arabic, Punjabi, Urdu and Chinese groups in 2006, at more than 80% (data not shown).

The strong migratory flows into Canada from abroad are a more important factor than the concentration of language groups themselves. The intensity of intergenerational immigrant-language transmission increased between 1981 and 2006, and this increase would have been even greater had it not been for the changes in the characteristics of these immigrants. From this standpoint, the selection of immigrants on the basis of

their education and knowledge of Canada's official languages appears to have contributed to slowing language transmission. Other factors have stimulated immigrant-language transmission in Canada, for example, globalization, which has made communications with foreign countries more accessible, less costly and faster (resulting from new information and communications technologies like the Internet and satellite television), and increased international air travel.

The intensity and regularity of international migratory flows to Canada mean that immigrant populations are constantly exposed to their language of origin, especially since migration often involves entire families.

Finally, the *Canadian Multiculturalism Act* supports and promotes different practices and activities (with regard to religion, children) that are based on groups' specificity or that foster religious, national or linguistic diversity in Canada. This article's long-term outlook should put these findings in perspective. As first-generation immigrants age, their descendants are experiencing rapidly decreasing immigrant-language transmission, which is at risk in certain groups with a pool of aging speakers and no longer able to renew itself (the German, Portuguese, Hungarian and Polish groups), notably through new migratory flows.

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2. Portes, Alejandro and Richard Schauffler. 1994. "Language and the second generation: Bilingualism yesterday and today." *International Migration Review*. Vol. 28, no. 4. p. 640-661.

3. Harrison, Brian. 1997. "Language integration: Results of an intergenerational analysis." *Statistical Journal of the United Nations Economic Conditions for Europe*. Vol. 14, p. 289-303;

   Turcotte, Martin. 2006. "Passing on the ancestral language." *Canadian Social Trends*. Statistics Canada Catalogue no. 11-008. Vol. 80, no. 4. p. 23-30.

4. Hoff, Erika. 2006. "How social contexts support and shape language development." *Developmental Review*. Vol. 26, no. 1. p. 55-88.

5. Harrison. 1997.

6. Countries where English has special status include India, Nigeria and Jamaica; for French, the list includes Senegal, Switzerland and Haiti.

7. Restricting the population of daughters to those aged 25 to 42, rather than including all ages, slightly affects the percentage value of the intensity of intergenerational language transmission. For all languages, including all women aged 15 and over slightly decreases the intensity of transmission to 20.2%.

8. An exogamous union refers to a couple in which each spouse has a different mother tongue.

9. Note here that the second generation includes only those women to whom an immigrant mother tongue was transmitted. This selective effect can make it difficult to compare the two groups of women.

10. Alba et al. 2002.

11. Kalmijn, M. and F. van Tubergen. 2006. "Ethnic intermarriage in the Netherlands: Confirmations and refutations of accepted insights." *European Journal of Population*. Vol. 22. p. 371-397.

12. Alba et al. 2002.

13. Harrison. 2000.

14. Alba et al. 2002.

15. Stevens, Gillian. 1985. "Nativity, intermarriage and mother-tongue shift." *American Sociological Review*. Vol. 50, no. 1. p. 74-83;

    Harrison, Brian 2000. "Passing on the language: Heritage language diversity in Canada." *Canadian Social Trends*. Statistics Canada Catalogue no. 11-008. Vol. 58. p. 14-19;

    Harrison et al. 1997;

    Alba et al. 2002;

    Turcotte. 2006.

16. In 1981, only 3% of mothers were born in a country with a francophone tradition, which could explain why it had little effect on language transmission in 1981.

17. Portes and Schauffler. 1994;

    Alba et al. 2002.

18. Corbeil, Jean-Pierre and Sylvie Lafrenière. 2010. *Portrait of Official-Language Minorities in Canada: Francophones in Ontario*. Statistics Canada Catalogue no. 89-642-X. 109 p.

19. Marmen, Louise and Jean-Pierre Corbeil. 2004. *Languages in Canada: 2001 Census*. Statistics Canada Catalogue no. 96-326-XIE. 163 p.;

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Generational change in paid and unpaid work

by Katherine Marshall

Introduction

Most adults spend years working at a paid job and working at home to maintain and run a household. Many factors influence the amount and type of paid and unpaid household labour performed, including where people are in their life cycle, the economy, their family status and social expectations. Understanding the distribution and division of paid and unpaid work over the life course helps with the development of workplace and family-related programs and policies.

Although a division of labour still exists within families, the hours of paid work, average earnings, and time spent on domestic labour and child care are becoming more similar between spouses in Canada and other OECD countries.[1] A parallel narrowing of the housework gap has been found among Canadian teenaged boys and girls.[2]

These findings suggest that the division of labour and role expectations for men and women are continuing to evolve. This may be especially true for Generation Y—those born between 1980 and 1995 and who grew up during a period of changing family dynamics and family formation. Their baby boomer parents, born and raised after the Second World War, were predominantly dual earners and a substantial number of mothers were the primary earners.[3] Furthermore, during Generation Y's childhood some of their fathers were likely to have taken paid parental leave, a program that was introduced and offered to fathers for the first time in 1990.

Age cohorts exposed to the same historical and cultural phenomena tend to share similar points of view.[4] Furthermore, the development of generational attitudes and behaviours are thought to be created in the formative years and often stabilize in adulthood.[5] Has being raised in a dual-earner culture influenced how the men and women of Generation Y participate in paid and unpaid household work? Has the division of labour within couples of this generation continued to converge?

This article uses time use data from the 1986, 1998 and 2010 General Social Survey on Time Use to examine changes in the participation in and time spent on paid work and unpaid household work of individuals aged 20 to 29 from three generations—late baby boomers and those in Generations X and Y (see "What you should know about this study"). This age range is selected so that Generation Y can be included in the study. The 2010 data offer a first-time opportunity to examine the time use of Generation Y—a group now in early adulthood. The final section looks at the distribution of time spent on paid and unpaid work within dual-earner couples.

More living at parent's home... one myth-confirming fact of Generation Y

A profile of late baby boomers and Generations X and Y shows that several socio-economic characteristics have changed considerably from one generation to the next (Table 1). Some noteworthy generational differences include the following:

- **Living in a couple is less common:** The percentage of 20- to 29-year-olds married or living common-law[6] has dropped substantially from 48% of late baby boomers to 37% for Generation X and 33% for Generation Y. This finding is consistent with the well-documented increase in the average age of first marriage for both men and women over the past few decades.[7]
- **Fewer have children:** Postponed marriage is linked to postponed parenthood. In 1986, 29% of late baby boomers aged 20 to 29 had children compared with 19% for Generation Y in 2010.
- **Employment rate is converging between men and women:** Almost three-quarters of those in their 20s reported being employed in the three years under study; but while men had a 10% higher employment rate than women in 1986, their rate was only 3% higher in 2010.

What you should know about this study

Every year since 1985, the **General Social Survey (GSS)** has interviewed Canadians aged 15 and over living in the 10 provinces on a wide range of issues. Using a 24-hour diary instrument, the GSS has collected detailed information on time use in five years (1986, 1992, 1998, 2005 and 2010). Individual activities are recorded sequentially over a 24-hour period, which is known as **Diary Day**. All activities are subsequently coded to a standard international classification. Each day of the week is sampled, and calculations from time use data are usually averaged over a 7-day period. While the 1986 survey collected data during the months of November and December only, all other cycles covered a 12-month period.

Since the GSS is a random-digit telephone survey and the frame consists of landline telephone numbers, households with cell phones only are excluded from the sample.

Target population: all respondents aged 20 to 29 at the time of the 1986, 1998 and 2010 surveys, with sample counts of 2,400, 1,700 and 1,500, respectively. The age range and respective survey years cover the majority of late baby boomers, and Generation X and Generation Y when they were in their 20s (see "Three generations" below for details).

Paid work: time spent on all activities related to a job or business. The time use surveys also include total time spent travelling to and from the workplace as well as unpaid work in a business and on a farm.

Unpaid household work: time spent on all household work and related activities including housework, child care and shopping for goods and services.

Housework: is one form of unpaid household work and is often divided into core and non-core activities; this study includes time spent on both. Core housework includes time spent on meal preparation, meal clean-up (doing the dishes, clearing the table), indoor cleaning (dusting, vacuuming) and laundry. Non-core work includes activities such as outdoor cleaning, mending or sewing, interior or exterior maintenance and repair, gardening, pet and plant care, and household administration.

Living with one or both parents: all those currently at home with one or both parents as well as those who are temporarily away at school or for seasonal work. Anyone temporarily absent is coded as living in the household if he or she spends at least 30 days of the year at home.

Dual earners: are defined as married or common-law couples in which the main activity of both partners in the previous seven days was "working at a paid job or business."

Activity participation rate: the proportion of the population (or subpopulation) that reported spending some time on a particular activity on Diary Day. The participation rate is a daily rate and, unless otherwise specified, the rate is an average daily rate over a 7-day week (average of the daily rates for Sunday through Saturday Diary Days).

Average time spent on specific activities of the population or subpopulation: the total time all respondents reported spending on a given activity divided by the population, and averaged over a 7-day week. The average time spent on activities for participants refers to the average time spent only for those who participated in the activity on Diary Day, but again averaged over 7 days.

Linear regression models: were used to examine the relationship between time spent (number of minutes) on paid work and housework on Diary Day and selected explanatory variables. Models were run for both men and women from each generation. Multicollinearity diagnostic tests were run for all models and bootstrap weights were used to adjust for the survey design.

Three generations

Through the works of renowned Canadians like economist David Foot and author Douglas Coupland, most people are aware to which generation they belong. The baby boom generation, born between 1947 and 1966, is probably the best known, but much has been written about the baby bust (1967 to 1979) and echo boom (1980 to 1995) generations, also known as Generations X and Y.[1]

Generations are delineations of birth years based on distinct historical periods. They include people born during a similar economic and cultural time period, which helps shape attitudes and behaviours. Studying generational differences improves insight into potential future social and economic change. According to Foot, demographic dynamics explain "two-thirds of everything" including consumer behaviour, demand for services, education, and family formation, all of which can influence public policy.[2]

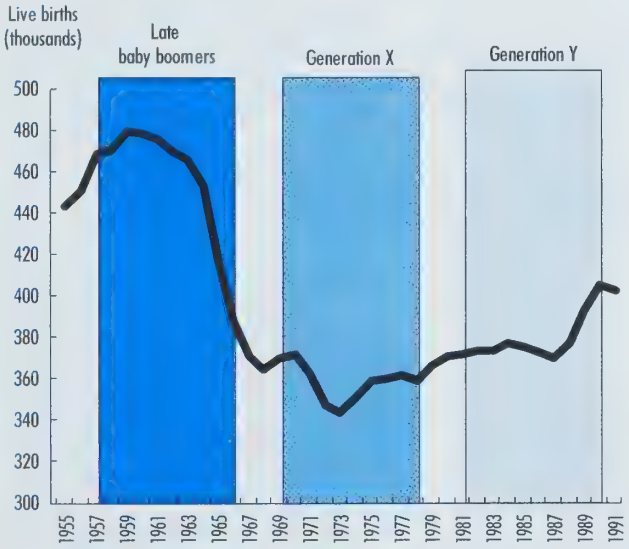
This study examines trends in time spent on paid and unpaid work for the above-mentioned three generations when they were between the ages of 20 and 29. This age

range is chosen for comparability purposes and because it is roughly the age range of Generation Y in 2010. The timing of the previous time use surveys also makes this study possible. For example, in 1986 (the first year of the Canadian GSS Time Use survey) late baby boomers[3] who were born between 1956 and 1966 were aged 20 to 30. Therefore, for comparability, late baby boomers born between 1957 and 1966 are included in the study as this represents the 20-to-29 age group in 1986. The 1998 GSS Time Use survey is used to examine Generation X. Although this generation's birth years range from 1967 to 1979, the study includes the years 1969 to 1978 as this represents those who were aged 20 to 29 in 1998. Finally, those born between 1981 and 1990 are selected from the 2010 GSS time use survey to represent Generation Y at age 20 to 29.

Late baby boomers were part of the second wave of the baby boom and included the peak years of the annual birth rate (see chart below). Between 1957 and 1966 there were approximately 4.6 million births in Canada. The introduction of the birth control pill and the increased involvement of women in the labour market have been linked to the substantial fall in the birth rate starting in the 1960s.[4] Between 1969 and 1978, there were 3.6 million births, and between 1981 and 1990, 3.8 million. The total population by birth year changes over time as deaths and emigration occur and as immigrants arrive.

1. Foot, David. 1998. *Boom, Bust and Echo 2000 – Profiting from the Demographic Shift in the New Millennium*. Toronto: Macfarlane, Walter and Ross; Coupland, Douglas. 1991. *Generation X: Tales for an Accelerated Culture*. New York: St. Martin's Press.
2. Foot. 1998.
3. The baby boom in Canada extended over a 20-year period and is often divided into two groups and described as the first and second wave, or the front and back end of the boom. For simplicity, this study refers to the second half of the boom as 'late baby boomers.'
4. Foot. 1998.

The annual number of births was highest for late baby boomers



Note: Shaded areas represent selected birth years of the generations under study, based on these birth years, in 1986, 1998, and 2010, late baby boomers, Generation X and Y, respectively, were aged 20 to 29.
Source: Statistics Canada, Vital Statistics.

Table 1 Profile of late baby boomers and Generations X and Y at ages 20 to 29

	Late baby boomers (born 1957 to 1966)	Generation X (born 1969 to 1978)	Generation Y (born 1981 to 1990)
		thousands	
Total population	**4,552**	**4,186**	**4,663**
		percentage	
Sex			
Men	51	50	51
Women	49	50	49
Age			
20 to 24 years	50	48	49
25 to 29 years	50	52	51
Marital status			
Married/common-law	48	37	33
Single	50	61	67
Other	F	F	F
Has children	**29**	**22**	**19**
Employment rate			
Both sexes	73	72	74
Men	78	76	75
Women	68	69	72
Student			
Both sexes	15	18	19
Men	16	20	19
Women	13	17	20
Lives at home with one or both parents			
All ages (20 to 29 years)	28	31	51
20 to 24 years	43	46	73
25 to 29 years	12	17	30
Immigrant	**11**	**16**	**18**
Reports no religion	**14**	**25**	**35**

Source: Statistics Canada, General Social Survey and Labour Force Survey, 1986, 1998 and 2010.

- **Staying in school longer:** Among late baby boomers, 15% reported their main activity was going to school, compared with 18% for Generation X and 19% for Generation Y. The proportion attending school has increased more for women than men.
- **More are living at home with their parents:** The percentage point increase of young adults living at home with their parents was particularly steep between Generation X and Y, up from 31% in 1998 to 51% in 2010. The upward trend to live at home longer is apparent among both the 20-to-24 and 25-to-29 age groups.[8]
- **Immigrant population is increasing:** The proportion of young adults who were born outside Canada has increased steadily. In 1986, 11% of late baby boomers were born outside Canada compared with 16% for Generation X and 18% for Generation Y. This trend is consistent with the increasing number of immigrants since the 1990s.[9]
- **Less religious affiliation:** Religiosity has decreased substantially among young adults. While 14% of late baby boomers reported having no religion, more than one-third (35%) of Generation Y did so.

Time spent at paid and unpaid work similar across the generations

Despite the varying socioeconomic characteristics of the three generations, findings from the GSS Time Use surveys indicate that, overall, the participation in and time spent on paid work and unpaid household activities is relatively similar across the years. Averaged over the week, 24-hour diary data show that about one-half of young adults aged 20 to 29 in all three periods (1986, 1998 and 2010) worked at a job the day they were interviewed, and more than three-quarters did some form of unpaid household work including housework, child care or shopping for goods and services (Table 2). At 47%, the daily participation rate in paid work was lowest for Generation Y.

In terms of unpaid household work, daily participation is consistently highest for housework, which increased from 63% among late baby-boomers in 1986 to 70% among Generation Y in 2010, and relatively low for child care (roughly 1 in 5) and shopping and services (roughly 2 in 5). Participation in child care is low for all three generations because only a minority of those aged 20 to 29 had children.

Among those who participated in the selected activities on Diary Day, on average much more time was spent on paid work (ranging from 8.5 to 8.8 hours per day) than unpaid work (ranging from 3.1 to 3.5 hours per day). Two notable changes between 1986 and 2010 include a significant decrease in the average time spent by participants on housework, down from 2.1 to 1.7 hours, and an increase in child care from 2.4 to 3.0 hours.

The change in housework time is likely linked to the greater proportion of young people living at home who, generally, do less housework than those living on their own. However, findings for the total population show that there has been an overall decline in time spent on housework in Canada and the United States.[10] Since the daily participation rate

Table 2 Participation in and time spent on selected activities for late baby boomers and Generations X and Y at ages 20 to 29

	Late baby boomers† (born 1957 to 1966)	Generation X† (born 1969 to 1978)	Generation Y (born 1981 to 1990)
	average hours per day		
Total population			
Paid work	4.3	4.7	4.1*
Unpaid work	2.6	2.7	2.6
Housework	1.3	1.3	1.2
Child care	0.6	0.6	0.6
Shopping for goods and services	0.8	0.8	0.8
Participants on Diary Day			
Paid work	8.5	8.8	8.7
Unpaid work	3.5	3.1	3.2**
Housework	2.1	1.7	1.7**
Child care	2.4	2.6	3.0***
Shopping for goods and services	2.1	1.9	1.9
	percentage		
Participation			
Paid work	51	53	47***
Unpaid work	76	86	81***
Housework	63	77	70***
Child care	23	23	20**
Shopping for goods and services	36	41	39

† reference group
* statistically significant difference of Generation Y from Generation X at $p < 0.05$
** statistically significant difference of Generation Y from late baby boomers at $p < 0.05$
*** statistically significant difference of Generation Y from both Generation X and late baby boomers at $p < 0.05$
Note: Time per day and participation rates are averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1986, 1998 and 2010.

for housework has increased and the time participants spend on it has decreased, the average time spent on housework spread over the population has changed only slightly over the generations (from 1.3 hours in 1986 to 1.2 hours in 2010).

The increase in time spent on child care may be due to the fact that Generation Y parents have younger children at home. In 2010, among Generation Y parents, 56% had an infant (under age 2) to care for, compared with 48% for Generation X in 1998.[11]

Although the global picture of generational change in paid and unpaid work appears nominal, trends by sex tell a different story. The remainder of this paper focuses on differences between men and women in paid work and housework among late baby boomers, and Generations X and Y. Housework is the only unpaid work activity selected since it makes up the bulk of all unpaid household work and, by necessity, many core activities such as meal preparation and clean-up, indoor cleaning and laundry are usually performed on a daily basis. Child care is an important topic but would require a separate, more in-depth analysis.

Work patterns most similar between men and women of Generation Y

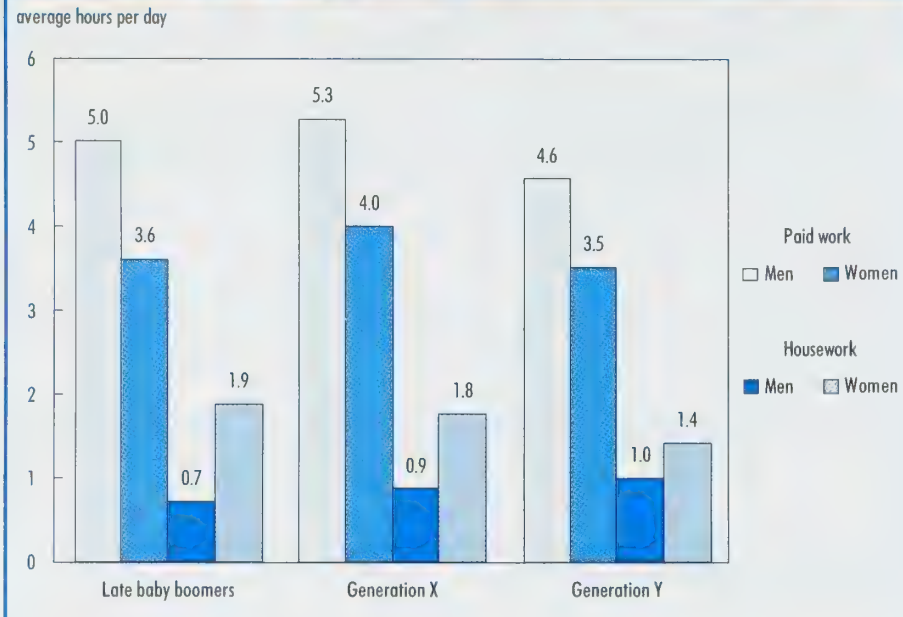
As shown, averaged over the population, time spent per day on paid work and housework for those aged 20 to 29 has remained relatively stable over the three generations. However, hidden in these averages are not only consistent differences between men and women, but also a reduction in the magnitude of these differences over time. In terms of the daily participation rate and average time spent, male and female differences in both paid work and housework have steadily declined from 1986 to 2010.

In 1986, on average, late baby boomer men did 1.4 hours more paid work per day than women, while the difference in paid work among Generation Y men and women stood at 1.1 hours in 2010 (Chart 1). In terms of housework, women aged 20 to 29 did 1.2 hours more per day than men in 1986, but only 0.4 hours more in 2010. It is noteworthy that time spent on housework by participants has also narrowed between men and women—due entirely to a decrease in the time women spend on housework. In 1986, among those who did some housework on Diary Day, women did 2 hours 25 minutes of housework and men 1 hour 31 minutes; in 2010, women did 1 hour 54 minutes and men 1 hour 34 minutes (data not shown).

Similar to the findings on paid work hours, men's daily participation rate in paid work has also been consistently higher than women's—but again, the extent of the difference has declined with each time period. For example, there was a 12 percentage point difference in the paid work participation rate of late baby boomer men and women in 1986, and an 8 percentage point difference for those of Generation Y in 2010 (Chart 2).

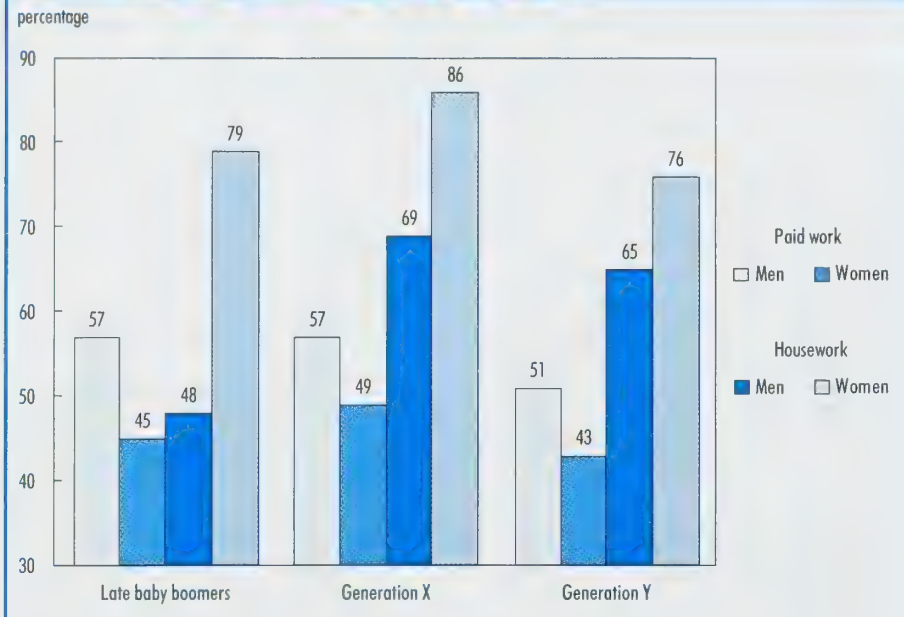
The narrowing of the gender gap in daily housework participation rates is the most noticeable. In 1986, 48% of late baby boomer men and 78% of women reported doing some housework on Diary Day; by 2010, 65% of Generation Y men of the same age range and 76% of women reported doing housework—a gap of 30 percentage points in 1986 and 11 percentage points in 2010.

Chart 1 Hours of paid work and housework the most similar for men and women of Generation Y



Note: For the population aged 20 to 29 in each generation, daily hours are averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1986, 1998 and 2010.

Chart 2 Over time, participation in paid work and housework has also converged for men and women



Note: For the population aged 20 to 29 in each generation, participation rates are averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1986, 1998 and 2010.

Children have opposite effects on the paid work of men and women

Several factors can influence the degree of involvement in paid work and housework among young adults, including student and family status, having dependent children at home and living arrangements. Although more difficult to measure, cultural expectations and trends can also affect behaviour. In order to determine which factors are associated with time spent on paid work and housework, separate linear regression models were run for men and women from each generation.

Even though, as noted, the difference has narrowed over time, averaged over the population in 2010 young Generation Y men spent more time on paid work than women (4 hours 35 minutes per day versus 3 hours 32 minutes). However, many of the characteristics associated with the number of hours spent in paid work are the same for both men and women and are constant across the generations. For example, when controls for other factors were taken into account, students were found to do significantly less paid work than non-students—not a surprising finding since attending school is the main activity of students (Table 3). However, over time students have increased their participation in paid work on Diary Day, confirming other findings that show an increasing proportion of full-time students who combine school and employment.[12]

For Generation Y men and women, having more than a high school education had a significant positive influence on time spent on paid work. Having more education likely helped with finding or keeping a job during 2010—a recovery year in the economic cycle. During the 2008/2009 economic downturn, job loss was particularly high among youth and those with a high school education or less.[13]

It is noteworthy that the proportion of women aged 20 to 29 with more than a high school education has

Table 3 Average time spent on paid work for late baby boomers, Generation X and Generation Y at ages 20 to 29, by sex

	Late baby boomers		Generation X		Generation Y	
	Performed paid work on Diary Day	Average time on paid work	Performed paid work on Diary Day	Average time on paid work	Performed paid work on Diary Day	Average time on paid work
	percentage	hours:minutes	percentage	hours:minutes	percentage	hours:minutes
All men	**57**	**5:02**	**57**	**5:18**	**51**	**4:35**
Age						
20 to 24 years†	52	4:32	47	4:24	49	4:07
25 to 29 years	62	5:31	67	6:08	53	5:03
Education						
High school diploma or less†	64	4:34	62	5:05	44	4:25
More than a high school diploma	53	5:40	56	6:07	53	4:37*
Lives with one or both parents						
Yes†	49	4:07	52	4:08	47	3:54
No	61	5:29	48	6:02*	57	5:32
Family status						
Single†	51	4:21	53	4:50	47	4:02
Married no children	63	5:41	70	6:31	62	5:51
Married with children	67	6:03	67	6:23	61	6:16
School attendance						
Student†	13	:51	18	1:09	18	:39
Not a student	66	5:49*	68	6:20*	59	5:29*
Immigrant status						
Immigrant†	62	5:45	49	5:01	45	3:59
Canadian-born	57	4:57	60	5:23	52	4:41
All women	**45**	**3:38**	**49**	**4:01**	**43**	**3:32**
Age						
20 to 24 years†	44	3:27	49	3:57	42	3:25
25 to 29 years	46	3:48	48	4:04	44	3:39
Education						
High school diploma or less†	43	3:23	43	3:28	31	2:14
More than a high school diploma	47	3:50	51	4:11	45	3:48*
Lives with one or both parents						
Yes†	53	3:23	52	3:49	47	3:50
No	43	4:32	48	4:04	40	3:19
Family status						
Single†	53	4:31	53	4:14	46	3:52
Married no children	55	4:23*	64	5:35	58	5:02
Married with children	29	2:02*	29	2:20*	23	1:33*
School attendance						
Student†	13	:48	27	1:45	21	1:30
Not a student	50	4:05*	53	4:27*	49	4:03*
Immigrant status						
Immigrant†	52	3:30	38	3:21	35	3:09
Canadian-born	44	4:30	51	4:06	44	3:36

† reference group

* statistically significant difference from the reference group at $p < 0.05$

Note: For the population, time per day and participation rates are averaged over 7 days.

Source: Statistics Canada, General Social Survey, 1986, 1998 and 2010.

increased substantially. In 2010, 83% of Generation Y women had more than a high school education, compared with 56% of late baby boomer women in 1986 (data not shown). Women with higher levels of education have higher employment rates and are more likely to work full-time.[14]

Family-related variables had significant effects on women's time spent on paid work in 1986, 1998 and 2010, but not on men's. The paid work hours for married men with children tended to be higher than those for single men and married men without children, whereas the opposite was true for women. After controls for other factors were applied, married women with children from all generations did significantly fewer paid work hours than single women. Late baby boomer married women with no children did significantly less paid work than single women, but this was not the case for their Generation X and Y counterparts.

Generation Y mothers spent considerably less time per day at paid work (1 hour 33 minutes) than late baby boomers (2 hours 2 minutes) and Generation Xers (2 hours 20 minutes) even though, overall, the labour force participation rate of mothers with young children has increased steadily over the past two decades.[15] The difference may be linked to dissimilar paid leave programs for the time periods and the incidence of having infants at home,[16] thus increasing the chance of Generation Y women being on leave at the time of the survey. Generation Y women are entitled to up to one year of combined paid maternity and parental leave after birth, whereas when Generation X women were aged 20 to 29, only 6 months of paid maternity and parental leave were available, and for late baby boomer women it was only 4 months of paid maternity leave.

Married women doing less housework and married men more

Similar to paid work, certain factors are associated with participation in and the average time spent on housework across generations for both men and women. Consistently, students and those who spent any time at a job on Diary Day did significantly less housework than non-students and those who did

Table 4 Average time spent on housework for late baby boomers, Generation X and Generation Y at ages 20 to 29, by sex

	Late baby boomers		Generation X		Generation Y	
	Performed housework on Diary Day	Average time on housework	Performed housework on Diary Day	Average time on housework	Performed housework on Diary Day	Average time on housework
	percentage	hours:minutes	percentage	hours:minutes	percentage	hours:minutes
All men	**48**	**:44**	**69**	**:53**	**65**	**1:01**
Age						
20 to 24 years†	43	:31	65	:36	60	:44
25 to 29 years	54	:56	73	1:08*	70	1:17*
Education						
High school diploma or less†	47	:43	72	1:03	60	:57
More than a high school diploma	49	:44	68	:46*	65	1:12
Lives with one or both parents						
Yes†	38	:30	60	:38	59	:44
No	53	:50*	74	1:02	73	1:24*
Paid work on Diary Day						
None†	56	1:03	74	1:15	66	1:22
Less than 8 hours	53	:49*	67	:48*	75	:54*
8 or more hours	39	:23*	63	:32*	60	:36*
Family status						
Single†	44	:36	66	:40	62	:51
Married no children	52	:52	72	1:08*	73	1:25
Married with children	55	1:00	80	1:39*	71	1:30
School attendance						
Student†	37	:21	62	:31	61	:40
Not a student	50	:48*	70	:55*	65	1:04*
Immigrant status						
Immigrant†	48	:43	62	:45	53	:44
Canadian-born	48	:44	70	:51	67	1:04*

not do any paid work (Table 4). Generations X and Y men aged 25 to 29 did significantly more housework than those aged 20 to 24, as did those living on their own in 1986 and 2010.

On average, education level had less effect on men's involvement in housework than women's. After controls for other factors were taken into account, in 1986 and 2010 women with higher education did significantly less housework than women with a high school diploma. Although higher income households (associated with higher levels of education) are more likely to hire domestic help,[17] this activity is not likely a factor in the differences found here. Only a small percentage of employed women aged 20 to 29 were in households that purchased cleaning services (7% in 2010).[18]

Compared with being single, marriage and children significantly increase the average time spent on housework for men from Generation X and women from all generations. Although not significantly different from those not in a couple, Generation Y married men, with and without children, spent similar time on housework to Generation X men. Overall, the difference in housework time between men and women in couples has become progressively smaller with each passing generation. For example, in 1986, late baby boomer married women without children did 1 hour 6 minutes more of housework work per day than married men without children, while, in 2010, Generation Y women did 19 minutes more than men.

But unlike paid work, there is an opposite trend for the average time spent on housework by sex, which shows increases in men's involvement in housework by all personal and demographic characteristics, and a steady decrease in women's. Averaged over the population, Generation Y men did 1 hour 1 minute of housework per day, which was

Table 4 Average time spent on housework for late baby boomers, Generation X and Generation Y at ages 20 to 29, by sex (continued)

	Late baby boomers		Generation X		Generation Y	
	Performed housework on Diary Day	Average time on housework	Performed housework on Diary Day	Average time on housework	Performed housework on Diary Day	Average time on housework
	percentage	hours:minutes	percentage	hours:minutes	percentage	hours:minutes
All women	**78**	**1:54**	**86**	**1:47**	**76**	**1:26**
Age						
20 to 24 years†	73	1:32	83	1:30	68	1:06
25 to 29 years	84	2:16	88	2:02	83	1:46
Education						
High school or less†	83	2:25	87	2:20	87	2:06
More than high school	74	1:28*	86	1:36	73	1:17*
Lives with one or both parents						
Yes†	58	:53	75	:59	64	:51
No	84	2:20	89	2:01*	84	1:54
Paid work on Diary Day						
None†	84	2:30	89	2:21	79	1:49
Less than 8 hours	77	1:40*	87	1:37*	79	1:22
8 or more hours	67	:53*	80	:57*	67	:42*
Family status						
Single†	61	:54	77	1:10	66	:51
Married no children	82	1:58*	91	1:55*	83	1:44*
Married with children	94	3:01*	94	2:43*	93	2:29*
School attendance						
Student†	59	:54	77	:54	66	:45
Not a student	81	2:02*	88	1:56*	78	1:35*
Immigrant status						
Immigrant†	73	1:28	76	1:31	67	1:14
Canadian-born	79	1:57	88	1:47	77	1:27

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Note: For the population, time per day and participation rates are averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1986, 1998 and 2010.

up from 44 minutes for late baby boomers in 1986 and from 53 minutes for Generation X in 1998. Meanwhile, Generation Y women did 1 hour 26 minutes of housework per day, down from 1 hour 54 minutes for late baby boomers and 1 hour 47 minutes for Generation Xers.

Young men may be increasing their involvement in housework due to cultural expectations and socialization. Research has shown that married men who had grown up in households with an employed mother spend more time on housework than married men who did not have an employed mother.[19] Furthermore, as noted previously, over the past two decades time spent on housework among teenage boys and girls has become more uniform.[20]

Work patterns more similar in young dual-earner couples

The reduced difference in the time spent on housework between young adult men and women may also be linked to the change in paid work hours within all families. Dual earners have been the dominant family form since the 1980s, but women continue to increase their proportional contribution of paid work within such couples.[21] In tandem, as women have increased their hours of paid work, men have steadily increased their share of household work, which may, in turn, be changing attitudes towards the division of labour.

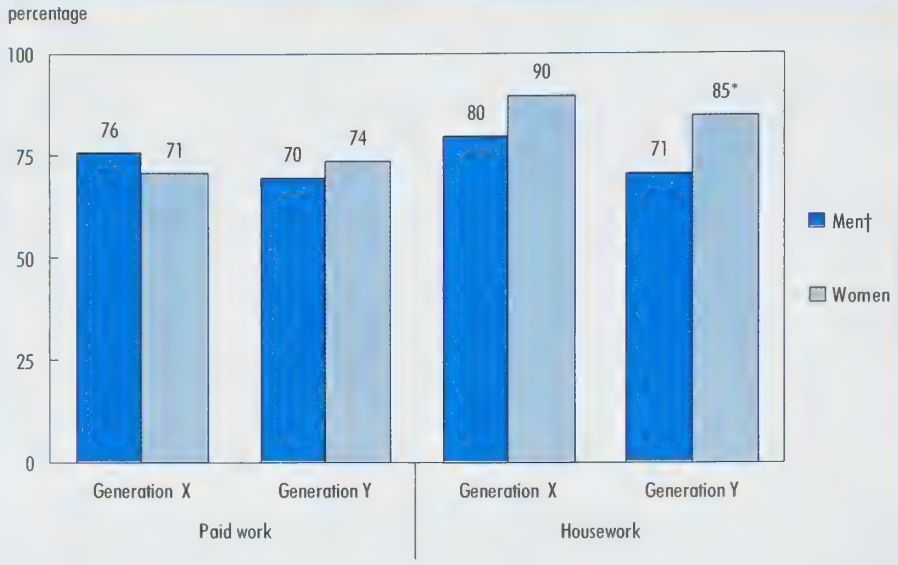
Among young adults from Generations X and Y, only a minority were part of a couple (Table 1) and an even smaller proportion were part of a dual-earner couple[22]. However, the populations of dual earners are nonetheless large enough to broadly examine the overall spousal contribution of paid work and housework hours.

Most dual-earner men and women from Generations X and Y reported participating in paid work and housework on Diary Day. In 1998 and 2010, the participation rate in paid work ranged from 70% and 76% for both sexes (Chart 3). Since the participation rate was averaged over the week, the paid work rate was lower than that for housework since it is usually performed for a maximum of five days per week, while meal preparation or cleaning, for example, is often done daily. In both generations, women have a higher daily housework participation rate than men—with a 10 percentage point difference for Gen Xers in 1998 and a 14-point difference for Generation Y in 2010.[23]

In terms of average time spent on paid work, Generation X women in dual-earner couples did 6.4 hours per day in 1998 and Generation Y women did 6.7 hours in 2010 (Table 5). These 1998 and 2010 averages represent 48% and 47%, respectively, of the total paid work time done by couples and, compared with another GSS time use study, are proportionally higher than what dual-earner women aged 25 to 54 did in 1992 (45%) and 2005 (46%).[24]

On the other hand, women's time spent on housework, relative to the total time done by the couple, has fallen. Dual-earner women from Generation Y did 53% of the total housework done by couples, down from 59% for dual-earner Generation X women. Again, these proportions were smaller than those for dual-earner women aged 25 to 54, who, in 2006, did 62% of the total housework done by the couple.[25] However, similar to the findings for older dual-earner couples, when dependent children are present, women's contribution to a couple's total paid work time becomes smaller, while the proportional contribution to housework becomes larger.[26]

Chart 3 Daily participation in paid work and housework relatively similar in dual-earner couples



† reference group
* statistically significant difference from the reference group at $p < 0.05$
Note: For the population aged 20 to 29 in each generation, participation rates are averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1998 and 2010.

Summary

Major life events of young adults aged 20 to 29 are generally the same from one generation to the next, but the timing of events can change. Overall, compared with late baby boomers (born from 1957 to 1966) and those in Generation X (1969 to 1978), those in Generation Y (1981 to 1990) were the least likely to be married or living common-law and have children. Those in Generation Y were also the

Table 5 Average daily time spent on paid work and housework for individuals in a dual-earner couple at ages 20 to 29

	Paid work			Housework			Wife's proportion	
	Both sexes	Men†	Women	Both sexes	Men†	Women	Paid work	Housework
	hours						percentage	
Generation X	**13.3**	**6.9**	**6.4**	**3.2**	**1.3**	**1.9***	**48**	**59**
No children at home	14.0	7.2	6.8	3.3	1.4	1.9	48	57
Has children	11.7	6.4	5.4	3.2	1.2	2.0	46	61
Generation Y	**14.1**	**7.5**	**6.7**	**3.1**	**1.5**	**1.7**	**47**	**53**
No children at home	13.5	6.5	7.0	3.2	1.7	1.5	52	48
Has children	14.1	9.0	5.1[E]*	3.4	1.2	2.1[E]	36	64

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Note: For the population, time per day is averaged over 7 days.
Source: Statistics Canada, General Social Survey, 1998 and 2010.

most likely to be still living at home with at least one parent. Also, both Generations X and Y were more likely to be attending school than late baby boomers.

Despite the socioeconomic changes in the characteristics of the three generations, participation in and time spent on paid work has remained relatively stable—with about 50% working at a job on any given day and spending between 8.5 and 8.8 hours at work. Contrary to this, involvement in daily housework has increased over time (70% in 2010) but the time spent on it has declined—from 2.1 hours per day in 1986 to 1.7 hours in 2010. This trend in housework is a result of an increase in the percentage of men participating in housework and a decrease in the time women spend on it.

For all generations, students spent significantly less time on paid work than non-students. Higher education was linked to more paid work for both men and women of Generation Y. Also, while children had no effect on men's paid work time across the years, their presence significantly lowered the hours of paid work for women.

Factors associated with spending significantly less time on housework include being a student, doing paid work on Diary Day, and, for men, being younger and living at home with at least one parent. Also, being in a couple, with or without children, significantly increased time spent on housework for men from Generation X and women from all three generations.

Progressively, from late baby boomers to those in Generation Y, there has been an increasing similarity in young men's and women's involvement in paid work and housework. However, despite the narrowing of the differences, compared with women, men continue to have an overall greater involvement in paid work and a lesser involvement in housework. For example, among late baby boomers, men spent 1.4 hours more per day on paid work than women, while Generation Y men did 1.1 hours more; late baby boomer women did 1.2 hours more housework per day than men and Generation Y women did 0.4 hours more.

An examination of men and women aged 20 to 29 in dual-earner couples confirms the trend that spouses are increasingly sharing economic and domestic responsibilities. In 2010, dual-earner Generation Y women did 47% of couples' total paid work and 53% of couples' housework. However, also similar to past trends, dependent children at home tend to increase the division of labour within young dual-earner couples.

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5. Williams, Andrea and James Davidson. 1996. "Catholic conceptions of faith: A generational analysis." *Sociology of Religion*. Vol. 57, no. 3. p. 273-289;

   Van den Broek, Andries. 1999. "Does differential cohort socialization matter?" *Political Psychology*. Vol. 20, no. 3. p. 501-523.

6. For the remainder of this paper, the term 'married' refers to those who are married or living common-law.

7. Statistics Canada. 2009. *Marriages 2004*. Statistics Canada Catalogue no. 84F0212XWX.

8 The extent of the increase suggests a real social trend of young adults remaining at home longer and is consistent with 2006 Census findings, however, another factor may be involved. (Milan, Anne, Vézina, Mireille and Carrie Wells. 2007. *Family Portrait: Continuity and Change in Canadian Families and Households in 2006, 2006 Census*. Statistics Canada Catalogue no. 97-553-XIE). It is likely that the number of young adults living on their own is under-represented in the 2010 survey since many of them live in cell-phone-only households which are excluded from the sampling frame (see "What you should know about this study").

9 Citizenship and Immigration Canada. 2011. *Facts and Figures 2009 – Immigration Overview: Permanent and Temporary Residents*. http://www.cic.gc.ca/english/resources/statistics/facts2009/permanent/index.asp.

10. Marshall. 2006;

    Bianchi, Suzanne M., Melissa A. Milkie, Liana C. Sayer and John P. Robinson. 2000. "Is anyone doing the housework? Trends in the gender division of household labor." *Social Forces*. Vol. 79, no. 1. September. p. 191-228.

11. Detailed age of children is not available from the 1986 survey for late baby boomers.

12. Since the late 1990s, almost 50% of full-time postsecondary students aged 15 to 24 were employed during the school year, up from 35% in 1985/1986 (Marshall, Katherine. 2010. "Employment patterns of postsecondary students." *Perspectives on Labour and Income*. Statistics Canada Catalogue no. 75-001-XPE. Vol. 22, no. 4; and Usalcas, Jeannine and Geoff Bowlby. 2006. "Students in the labour market." *Education Matters*. Statistics Canada Catalogue no. 81-004-XIE. Vol. 3, no. 1).

13. LaRochelle-Côté, Sébastien and Jason Gilmore. 2010. "Canada's employment downturn." *Perspectives on Labour and Income*. Statistics Canada Catalogue no. 75-001-XPE. Vol. 22, no. 1.

14. Chung, Lucy. 2006. "Education and earnings." *Perspectives on Labour and Income*. Statistics Canada Catalogue no. 75-001-XPE. Vol. 18, no. 3.

15. Luffman, Jacqueline. 2006. "The core-age labour force." *Perspectives on Labour and Income*. Statistics Canada Catalogue no. 75-001-XPE. Vol. 18, no. 4.

16. Among Generation Y mothers, 59% had at least one child under the age of 2 at home compared with 46% of Generation X mothers (data not available for late baby boomers).

17. Marshall. 2006.

18. The sample size is too small to examine purchasing differences by level of education.

19. Gupta, Sanjiv. 2006. "The consequences of maternal employment during men's childhood for their adult housework performance." *Gender and Society*. Vol 20, no. 1. p. 60-86.

20. Marshall. 2007.

21. Marshall. 2009.

22. It is not possible to examine late baby boomers in dual-earner couples since the 1986 General Social Survey did not ask about the main activity of the respondent's spouse.

23. At 0.054, the probability value of the 1998 difference was close to the <0.05 significance level.

24. Marshall. 2006.

25. Marshall. 2006.

26. Many of the differences in time spent on paid work and housework between men and women with children at home would likely be significant with a larger sample size. The estimates have relatively large coefficients of variation.

Commuting to work: Results of the 2010 General Social Survey

by Martin Turcotte

Introduction

For many workers, commuting to work is routine and causes little concern. Others, however, consider it a waste of time and a source of stress and frustration. This is especially true for workers whose commutes seem to take an eternity and are made even slower by traffic congestion.

Often irritating workers, traffic slowdowns and capacity problems in the road system are serious issues. In addition to delaying deliveries and reducing business productivity, traffic congestion contributes to urban smog and pollution—diminishing environmental quality and jeopardizing public health.

This article examines various facets of travelling between home and work. Part 1 begins with information about commuting times and how frequently workers are caught in traffic. In particular, it compares commuting times in major metropolitan areas by mode of transportation used by workers. Part 2 looks at workers' perceptions of the time they spend commuting. Are they happy with this time or not? In the past, there was no way of answering this question, but now there is data from the General Social Survey which allows this question to be addressed.

In Part 3, the focus is on car users' perceptions of public transit. Have they ever tried using public transit to get to their current place of work? Is it convenient for them? In Part 4, a connection is drawn between the characteristics of commuting to work (commuting time, recurrence of traffic congestion, etc.) and selected subjective measures of quality of life, including stress levels and satisfaction with work–life balance. For more information, see the box entitled "What you should know about this study".

Part 1: Commuting times by place of residence, mode of transportation, residential density and traffic congestion

The larger and more populous the region, the longer it takes to get to work

In 2010, it took Canadian workers an average of 26 minutes to get to work on a typical day (the average includes all modes of transportation). This average was affected by various factors, including where workers lived. In general, travel times are longer in large metropolitan areas, where workers have to travel greater distances and traffic congestion is more frequent (Table 1).

For example, average commuting time was longest (30 minutes) in the six largest census metropolitan areas (areas with at least 1 million residents: Toronto, Montréal, Vancouver, Ottawa–Gatineau, Calgary and Edmonton). In the 10 census metropolitan areas (CMA)[1] with between 250,000 and fewer than 1 million residents in 2006, average commuting time was shorter (25 minutes).

Smaller census metropolitan areas with fewer than 250,000 residents had the shortest commuting times, averaging 19 minutes. In general, these smaller CMAs have many places of work that are not difficult to get to, in part because traffic congestion occurs less frequently. Average commuting times were the same in census agglomerations (areas with between 10,000 and 100,000 residents).

Commuting times were slightly longer in areas outside census agglomerations and census metropolitan areas (23 minutes on average). This might be because some people who live outside the boundaries of census metropolitan areas commute into those areas. In addition to travelling long distances, these workers may encounter traffic congestion if they commute into major centres.

What you should know about this study

This article is based on data from Statistics Canada's 2010 General Social Survey on Time Use, which included questions on time stress and the sense of well-being. A section of the survey also dealt with commuting to work.

This study is about people whose main activity during the week preceding the interview was working at a paid job or for themselves. People who were on vacation that week are excluded, as are those who worked at home and did not commute to work. The result is a sample of 6,650 respondents representing about 13.2 million workers in 2010.

Definitions

Commuting time: To measure how much time workers spend commuting, they were asked: "On a usual day last week, how many minutes did it take you to go one way from home to work?"

Mode of transportation: There were three modes of transportation reported: car or private vehicle, public transit and active transportation.

Car users: includes both passengers and drivers who use a private motor vehicle to commute to work.

Public transit users: includes passengers of public transit systems, including streetcars, subways, light-rail transit, commuter trains and ferries.

Active transportation: includes walking and cycling.

Respondents were given the opportunity to report more than one mode of transportation for their commute to work and people who reported using public transit in combination with some other mode of transportation (car, walking) are included with public transit users.

When Canada's six largest metropolitan areas are compared, a positive relationship between population size and commuting times is found. Of those six areas, the two most populous—Toronto and Montréal—have the longest commuting times (33 minutes and 31 minutes respectively). In both, 27% of workers had travel times of 45 minutes or more, which is much greater than in any other CMA or other area (Table 1). For more details on commuting in Toronto, Montréal and Vancouver, see the "Getting to work in Toronto, Montréal and Vancouver" text box.

Commuting takes longer by public transit than by car

How someone gets to work is associated with how long it takes to get to work. Workers who walk or bicycle to work have shorter trips (14 minutes on average) while public transit users spend considerably more time travelling to work (44 minutes). Car users, including passengers, fall somewhere in the middle. Since the vast majority of workers travel in private vehicles, their average commuting time of 24 minutes is very close to the average for all workers.

It makes sense to compare the commuting times of car users and public transit users based on the size of the metropolitan area. In 2010, in the six largest metropolitan areas, car users took an average of 27 minutes to get to work, while public transit users took 44 minutes. In mid-sized metropolitan areas (areas with between 250,000 and 1 million residents), the difference in average commuting times was larger—23 minutes for car users and 46 minutes for public transit users.

The gap is not due to distance travelled, as public transit users generally travel shorter distances. Among workers in CMAs with at least 250,000 residents who travel less than 5 kilometres to get to work, car users had an average commuting time of 10 minutes, compared with 26 minutes for public transit users (data not shown). The same held true for longer distance categories.[2] Since the use of public transit involves walking, waiting and sometimes traffic congestion, it is not surprising that commuting times are generally longer for public transit users. Nevertheless, the use of bus lanes and underground rail lines can speed up public transit commutes and even make them shorter than automobile commutes. However, when average commuting times for public transit users and car users are compared, automobile commutes are shorter.

The conclusions concerning commuting times by mode of transportation are much the same when proportions of users are considered. For example, in 2010, among workers in metropolitan areas with a population of at least 250,000 who lived 5 or more kilometres from their place of work, 45% of public transit users had morning commutes of 45 minutes or more, compared with 18% of car users (data not shown).

Low residential density neighbourhoods are less conducive to public transit

Access to public transit is closely tied to urban land use. It is much easier to provide efficient public transit in the high-density residential neighbourhoods typical of the central areas of major cities. The pool of potential users per square kilometre is much larger in such areas. This has an impact on public transit users who live in lower-density residential neighbourhoods—their commuting times are longer because the

Table 1 Average commuting time to work and proportion of workers, by selected characteristics, 2010

	Average	Commuting time			
		Less than 15 minutes	15 to 29 minutes	30 to 44 minutes	45 minutes or more
	minutes	percentage			
Total Canada	**26**	**30**	**33**	**19**	**17**
Type of region of residence					
Census metropolitan areas of 1,000,000 or more residents†	30	19	33	25	23
Census metropolitan areas of 250,000 to 999,999 residents	25*	29*	38*	18*	15*
Census metropolitan areas of less than 250,000 residents	19*	41*	39*	13*	7*
Census agglomerations	19*	49*	31	11*	10*
Outside of census metropolitan areas and census agglomerations	23*	41*	29*	15*	15*
Census metropolitan area					
Toronto†	33	15	33	25	27
Montréal	31	20	27	27	27
Vancouver	30*	22*	33	25	21*
Ottawa–Gatineau	27*	15[E]	50*	21	14[E]*
Calgary	26*	21[E]	33	29	16[E]*
Edmonton	23*	27*	41	20	12[E]*
Mode of transportation					
Car or private vehicle†	24	31	36	18	15
Public transit	44*	5*	21*	30*	43*
Active transportation (walking or cycling)	14*	57*	27*	14*	F
Type of region and mode of transportation					
Census metropolitan areas of 1,000,000 or more residents					
Car/private vehicle†	27	21	37	24	18
Public transit	44*	5[E]*	20*	31*	44*
Census metropolitan areas of 250,000 to 999,999 residents					
Car/private vehicle†	23	31	40	17	12
Public transit	46*	F	25[E]*	29[E]*	42*

† reference group
* statistically significant difference from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Getting to work in Toronto, Montréal and Vancouver

Data from the General Social Survey can provide a more detailed picture of commuting times in Canada's three largest metropolitan areas, as the number of survey respondents from these three areas allows for more detailed analysis.

Average commuting times in these three CMAs followed the general trend: they were longer for public transit users than for car users. In Toronto and Vancouver, it took public transit users about 20 minutes longer than car users to get to work, while in Montréal, the difference was much smaller (about 10 minutes) (text box table).

CMAs are named after their central municipality, but they also contain other municipalities, which may be described as 'neighbouring', 'peripheral' or 'suburban' municipalities. The urbanization of most peripheral municipalities has been a function of automobile use. In contrast, many neighbourhoods in Toronto, Montréal and Vancouver are densely populated, which favours active modes of transportation or public transit. These differences in urban planning and the development of road systems can have a major impact on how workers commute to work.

In these three areas, workers living in the central municipality were much more likely to use public transit than workers in neighbouring municipalities. The difference was particularly pronounced in Montréal, where 41% of workers living in the city of Montréal commuted by public transit, compared with 11% of workers in neighbouring municipalities.

The differences in commuting times within the three areas were small. In the Vancouver area, the average commuting time was 27 minutes for workers living in the central municipality, compared with 31 minutes for workers residing in neighbouring municipalities (text box table). In the Montréal area, it took workers from the city of Montréal an average of 28 minutes to get to work, while the average commuting time for their counterparts in neighbouring municipalities, such as Laval or Longueuil, was 34 minutes. In the Toronto area, commuting times were the same for workers residing in the central municipality and workers in neighbouring municipalities (33 minutes).

These relatively minor differences may be due to the fact that many workers from peripheral municipalities do not have to travel to the central municipality to get to their place of work. Prior to economic expansion into the suburbs, the suburban municipalities played an essentially residential role within the census metropolitan area. This is no longer the case, since a great many jobs are outside the central municipality/city centre. According to 2006 Census data, for example, employment grew even more rapidly in the peripheral municipalities than in the central municipalities.[1]

Workers in the greatest metropolitan areas are more likely to experience traffic congestion daily on their way to work (Table 2). In the Toronto CMA, 29% of full-time workers were caught in traffic jams every day of the week, compared with 26% of their counterparts in Montréal and 25% of full-time workers in Vancouver (results not shown). In the Montréal metropolitan area, residents of the central municipality, i.e. of the city of Montréal, were less likely to experience traffic congestion every day (18% of full-time workers compared to 29% of those in the surrounding municipalities). The same held true in Vancouver with respective proportions of 17% of full-time workers living in the city of Vancouver caught daily in traffic compared with 28% of those living in surrounding municipalities.

1. Statistics Canada. 2007. *Commuting Patterns and Places of Work of Canadians, 2006 Census*, Statistics Canada Catalogue No. 97-561.

Getting to work in Toronto, Montréal and Vancouver (continued)

Mode of transportation and average commuting time to get to work in Montréal, Toronto and Vancouver census metropolitan areas

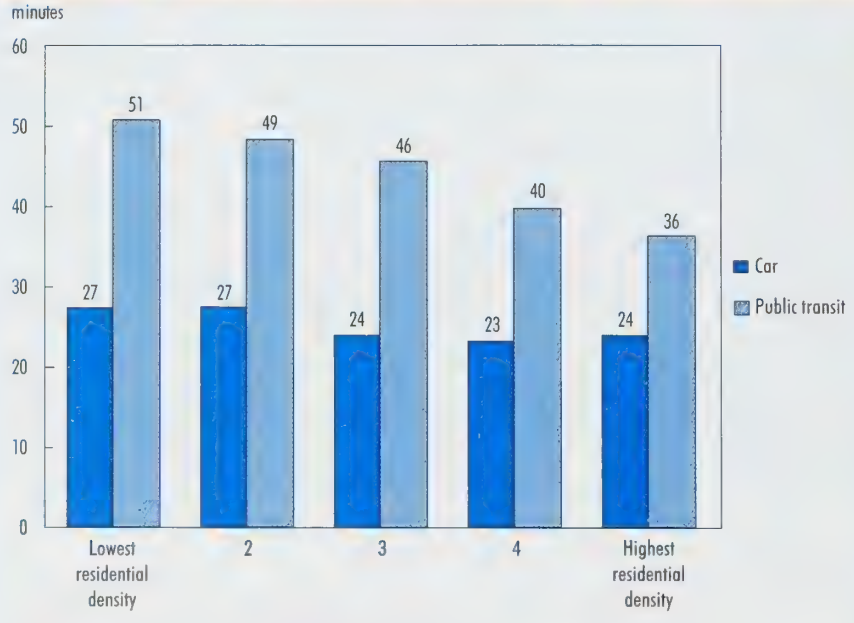
	Mode of transportation			Average commuting time to work		
	Toronto	Montréal	Vancouver	Toronto	Montréal	Vancouver
	percentage using public transit			minutes		
Mode of transportation						
Car†	...	...	...	29	30	25
Public transit	...	...	...	49*	39*	48*
Place of residence						
Central municipality†	29	41	32	33	28	27
Neighbouring municipalities	16*	11[E]*	17*	33	34*	31

† reference group
* statistically significant difference from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

distances are greater. Less frequent service may also increase public transit commuting times if transfers are necessary and schedules are out of sync.

The impact of neighbourhood is evident when public transit users in metropolitan areas with 250,000 or more residents are examined. In neighbourhoods with the highest residential density, typical of city centres, public transit users' average commuting time was 36 minutes. In comparison, public transit users in the lowest residential density neighbourhoods took an average of 51 minutes to get to work. On the other hand, there was little or no connection between residential density and the commuting times of car users (Chart 1).

Chart 1 In low-density neighbourhoods, public transit takes more time



Note: For workers living in a census metropolitan area of 250,000 or more residents.
Source: Statistics Canada, General Social Survey, 2010.

Traffic congestion makes commutes longer and affects many workers

In the 2010 General Social Survey, workers were asked for the first time whether traffic congestion was recurrent, occasional or non-existent during their daily commute to work. The following analysis is confined to full-time workers as respondents were asked about the frequency of congestion during an entire week.

In 2010, nearly 20% of full-time workers reported experiencing traffic congestion every day they commuted to work. Another 8% said they encountered congestion three or four times a week. On the other hand, a majority of workers (51%) said they were never caught in traffic jams on the way to work (Table 2).

Congestion problems were more frequent for car users in larger metropolitan areas. In the largest metropolitan areas, for example, about 30% of car users who were employed full time experienced heavy traffic every work day. In comparison, this was the case for 8% of workers living outside census metropolitan areas and census agglomerations.

Public transit users were not immune from traffic problems (Chart 2). This is attributable in part to the fact that many buses use the same road lanes as private cars and that some workers drive to park-and-ride lots before taking public transit. In 2010, in the six largest metropolitan areas, 53% of public transit users encountered congestion at least one day a week, compared with 67% of car users. However, they experienced congestion less frequently than car users (22% of public transit users were caught in traffic at least three days a week, compared with 41% of car users). It is impossible to differentiate between subway users and bus riders.

Not surprisingly, car users in large metropolitan areas who frequently experienced traffic congestion had longer commuting times (Chart 3). Congestion had a particularly large impact on workers who commuted more than 25 kilometres: those who never encountered congestion took an average of 36 minutes to get to work, while those who were caught in traffic at least three days a week took 51 minutes.

Part 2: Workers' perceptions of commuting time

Most workers are satisfied with their commuting times

Some people may consider a commute to work of 45 minutes or more acceptable, while others may find this hard to bear. How satisfied are workers with their commuting times?

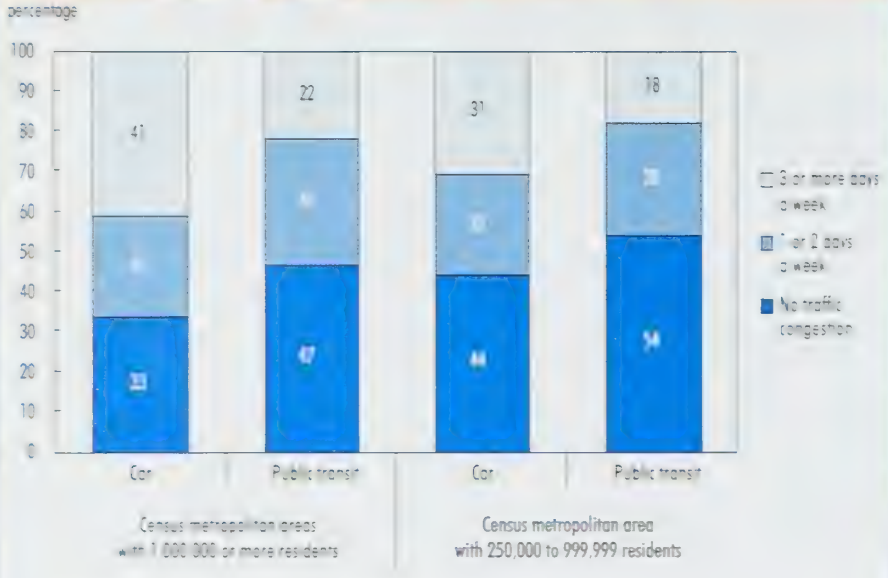
In general, satisfaction with commuting times was high: 39% said they were very satisfied with the amount of time it took to get to work, and another 46% said they were satisfied. This leaves 15% of workers who were dissatisfied with the amount of time required to travel to work. The proportion of dissatisfied workers was highest (20%) in census metropolitan areas with 1 million residents or more. Outside these areas, the proportion of dissatisfied workers ranged from 8% to 10% (Table 3).

Table 2 Frequency of traffic congestion by type of region of residence and mode of transportation, full-time workers, 2010

	Type of region of residence					
	Total	Census metropolitan areas of 1,000,000 or more residents†	Census metropolitan areas of 250,000 to 999,999 residents	Census metropolitan areas of less than 250,000 residents	Census agglomerations	Outside census metropolitan areas and census agglomerations
	percentage					
All full-time workers	**100**	**100**	**100**	**100**	**100**	**100**
No traffic congestion	51	38	47*	53*	67*	78*
1 or 2 days a week	22	26	25	24	15	11*
3 or 4 days a week	8	10	10	8	7*	4E*
Every day	19	26	19*	16*	11*	8*
Car drivers and passengers	**100**	**100**	**100**	**100**	**100**	**100**
No traffic congestion	50	33	44*	52*	65*	77*
1 or 2 days a week	21	25	25	24	16*	11*
3 or 4 days a week	9	12	10	8E*	7*	4E*
Every day	20	30	20*	16*	12*	8*

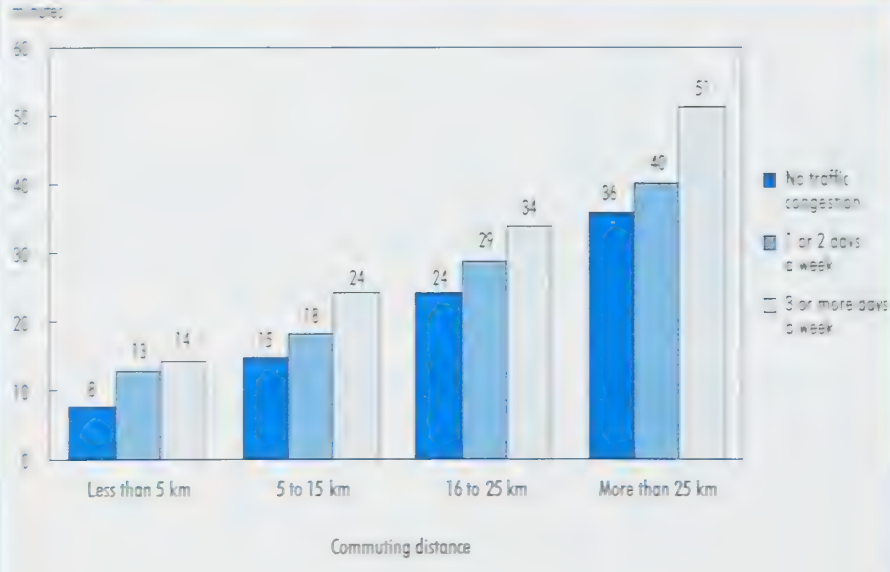
† reference group
* statistically significant difference from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Chart 2 Many public transit users experience traffic congestion 3 or more days a week



Note: For full-time workers living in a census metropolitan area of 250,000 or more residents.
Source: Statistics Canada, General Social Survey, 2010.

Chart 3 Influence of traffic congestion on time spent commuting in the car, by commuting distance



Note: For full-time workers living in a census metropolitan area of 250,000 or more residents.
Source: Statistics Canada, General Social Survey, 2010.

Not surprisingly, dissatisfaction increased with commuting time. Nevertheless, a slight majority (55%) of those who took 45 minutes or more to get to work said they were satisfied or very satisfied with their commuting time. People who choose to live a long distance from their place of work might be more likely to accept the fact that it takes them a considerable amount of time to commute.

Traffic congestion is a major source of dissatisfaction

As with commuting time, traffic congestion leaves people very dissatisfied. In the absence of traffic congestion, a large majority of workers said they were satisfied or very satisfied with their commuting times. For example, 24% of those who had commuting times of 45 minutes or longer but never experienced traffic congestion said they were dissatisfied with that length of time (Table 3). The proportion was substantially higher (64%) for those who spent the same amount of time commuting but were caught in traffic at least three days a week.

The results were similar for other categories of commuting time, with very low levels of dissatisfaction for workers who never encountered congestion and much higher levels for those who did so every day or most days.

Public transit users are more tolerant of longer commuting times

In larger metropolitan areas, 6% of workers who used an active mode of transportation (walking or bicycling) to get to work were dissatisfied with their commuting time. Public transit users were more likely than car users to be dissatisfied with their commuting times (23% versus 18%). Public transit users' higher level of dissatisfaction was primarily due to the fact it took them longer on average than car users to get to work.

However, when commuting times were taken into account, a complex relationship between transportation

Table 3 Satisfaction with time spent commuting to work, 2010

	Degree of satisfaction		
	Very dissatisfied or dissatisfied	Satisfied	Very satisfied
	percentage		
Total Canada	**15**	**46**	**39**
Type of region of residence			
Census metropolitan areas of 1,000,000 or more residents†	20	49	31
Census metropolitan areas of 250,000 to 999,999 residents	14*	48	38*
Census metropolitan areas of less than 250,000 residents	8*	46	46*
Census agglomerations	9*	42*	49*
Outside of census metropolitan areas and census agglomerations	10*	41*	49*
Time spent commuting to work			
Less than 15 minutes†	4	26	70
15 to 29 minutes	7*	55*	38*
30 to 44 minutes	16*	63*	21*
45 minutes or more	45*	46*	9*
Time spent commuting to work and frequency of traffic congestion[1]			
Less than 15 minutes			
No congestion†	3E	19	78
1 or 2 days a week	4E	39*	57*
3 or more days a week	12E*	54*	34*
15 to 29 minutes			
No congestion†	3E	43	54
1 or 2 days a week	2E	67*	31*
3 or more days a week	23*	66*	11*
30 to 44 minutes			
No congestion†	5E	57	38
1 or 2 days a week	10E	74*	16E*
3 or more days a week	33*	62	5E*
45 minutes or more			
No congestion†	24	57	20
1 or 2 days a week	38*	52	10E*
3 or more days a week	64*	34*	F
Mode of transportation[2]			
Car/private vehicle†	18	49	32
Public transit	23*	52	25*
Active transportation (walking or cycling)	6E*	27*	66*

† reference group
* statistically significant difference from reference group at $p < 0.05$
1. For full-time workers only.
2. Workers living in census metropolitan areas of 250,000 residents or more only.
Source: Statistics Canada, General Social Survey, 2010.

Changes in round-trip commuting times

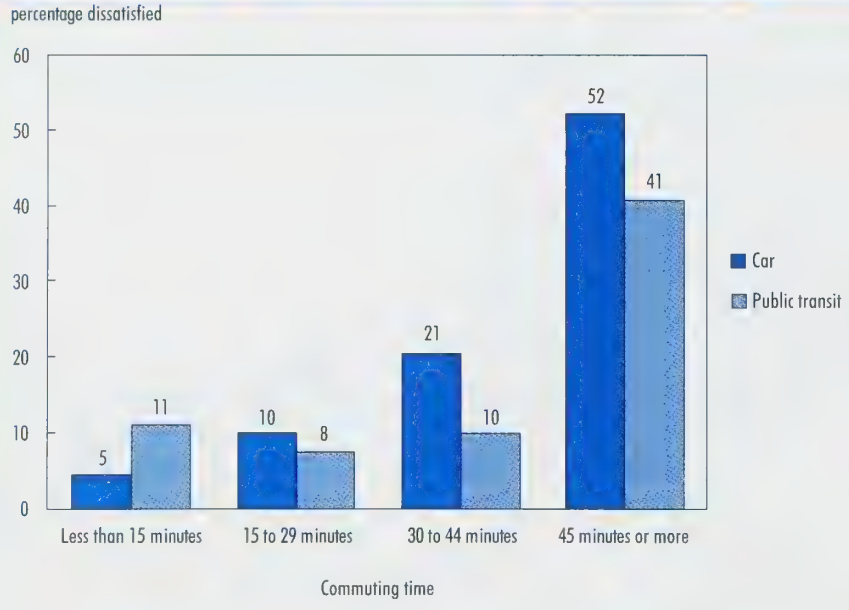
The round-trip commute between home and work is not always direct. Many workers make one or more stops en route—to drop off their children at school or daycare, buy a few things at the grocery store or pick up clothing at the dry-cleaner's. Obviously, these stops and side trips increase total commuting time between home and work.

If the entire duration of travel between home and place of work includes such side trips, the average round-trip commute was 65 minutes in 2010 for workers making a round trip on weekdays between their home and their main place of work. The average round-trip commuting time has increased: it was 63 minutes in 2005, 59 minutes in 1998 and 54 minutes in 1992. In 2010, it was longer in the three largest metropolitan areas: 81 minutes in Toronto, 76 minutes in Montréal and 74 minutes in Vancouver.

For all workers, side trips to buy goods and services were the largest contributors to the increase in round-trip commuting times to work, followed by travel for child-care activities (appointments, school, etc.) and travel to restaurants.

For more information on the methods used to estimate round trip commuting times, please refer to: Turcotte, Martin. 2007. *The time it takes to get to work and back*. Statistics Canada Catalogue no. 89-622.

Chart 4 Car users with the longest commutes more likely than public transit users to be dissatisfied with commuting time



Note: For full-time workers living in a census metropolitan area of 250,000 or more residents.
Source: Statistics Canada, General Social Survey, 2010.

mode and satisfaction level emerged (Chart 4). For shorter commuting times, public transit users were less satisfied than car users. Yet, as commuting time increased, the pattern was reversed. For example, 21% of car users with commuting times between 30 and 44 minutes said they were dissatisfied, compared with 10% of public transit users.

Part 3: What workers think about public transit

A major goal of urban transportation is to encourage car users to leave the comfort and convenience of their automobiles and take public transit. In Canada in 2010, 82% of workers travelled to work by car, 12% took public transit, and 6% walked or bicycled.

In the 2010 General Social Survey, workers who did not use public transit were asked if they had ever tried using public transit to travel to work. They were also asked how they rated the level of convenience of public transit.

Of the 10.6 million workers who commuted by car, 15%, or 1.6 million, had tried using public transit to get to work. Slightly less than half (47%) of those who had tried public transit felt that it was a convenient way to get to work.

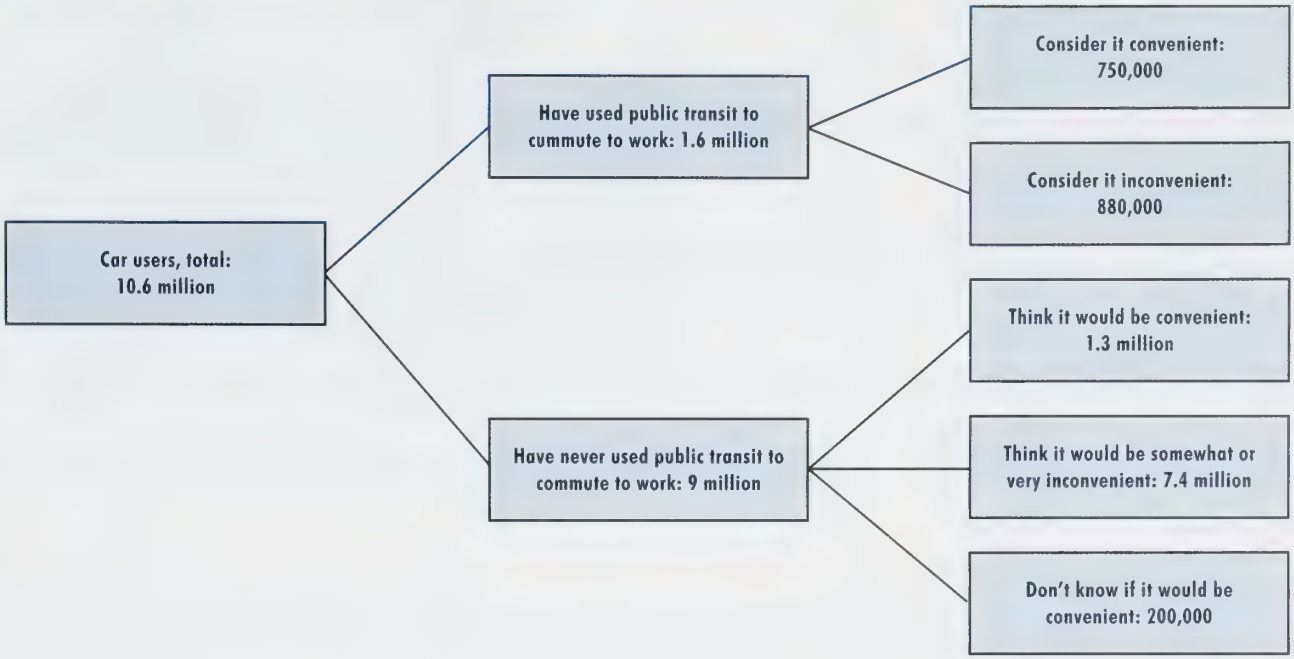
The same question was asked of the 9 million car users who had never tried using public transit to commute to work. Of that group, 15% thought that it would be convenient (Figure 1).

In summary, of the 10.6 million car users, just over 2 million felt that public transit would be convenient for them, while about 8.3 million thought it would be somewhat or very inconvenient.

Part 4: The impact of commuting on stress, well-being and work–life balance

A number of factors come into play in the choice of where to live. One of them is distance from work. If it is assumed that for people who choose to live far from where they work, the advantages of the location are well worth the time spent commuting.

Figure 1 A majority of car users find public transit inconvenient



Accordingly, general well-being or satisfaction should be similar regardless of the amount of time it takes to commute to work. However, the results of the General Social Survey on Time Use show this is not the case and that longer commuting times are associated with higher stress and less satisfaction with work–life balance.

Workers with longer commutes find most days stressful

The connection between commuting times and stress was clear. Of the full-time workers who took 45 minutes or more to travel to work, 36% said that most days were quite or extremely stressful. In contrast, this was the case for 23% of workers whose commuting time was less than 15 minutes (Table 4).

The same type of difference was observed for the frequency with which workers experienced traffic congestion. Of those who were caught in traffic at least three days a week (about one out of four workers), 38% said that most days were quite or extremely stressful. The corresponding proportion was 25% for those who never encountered traffic problems on their way to work.

High stress levels are associated with a number of other factors such as health status, hours worked, presence of children and occupation (Table 4). Some of these factors, such as hours worked or health status, had a greater impact on stress levels than did commuting times. For example, 43% of full-time workers who were in fair or poor health described most days as quite or extremely stressful, compared with 21% of those who were in excellent health. On the other hand, many factors were less closely associated with stress than commuting time, such as the presence of children, education and household income.

Moreover, when the impact of all these factors was kept constant in a regression model, the general conclusion was unchanged: workers who experienced traffic congestion more frequently and workers who had longer commuting times were more likely to rate most days as quite or extremely stressful (data not shown).

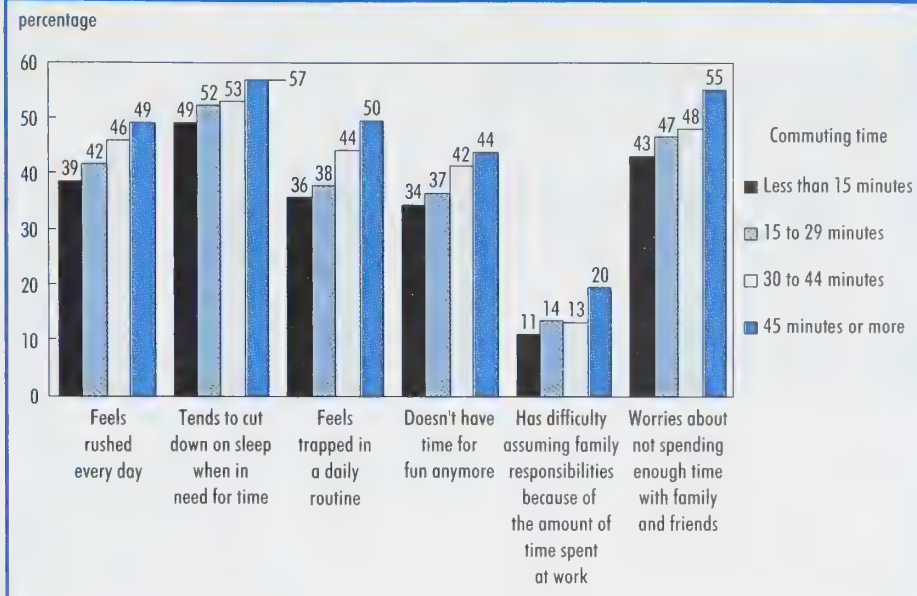
The association between commuting times, the frequency of traffic congestion and a series of time-stress indicators is presented in Chart 5. For each indicator, an increase in commuting time is associated with an increase in the prevalence of stress. For example, 39% of full-time workers who took less than 15 minutes to travel to the office felt that they felt pressed for time every day. Among those whose commuting time was 45 minutes or more, the proportion was almost one out of two (49%). The feeling of being trapped in a routine and the impression that there is no time for fun also increased with commuting time.

Table 4 Commuting time, traffic congestion and other factors associated with stress and work–family balance, full-time workers, 2010

	Workers describing most of their days as somewhat or very stressful	Workers satisfied or very satisfied with their work–family balance
	percentage	
Time spent commuting to work		
Less than 15 minutes†	23	79
15 to 29 minutes	26	73*
30 to 44 minutes	32*	70*
45 minutes or more	36*	65*
Frequency of traffic congestion		
No congestion†	25	78
1 or 2 days a week	23	71*
3 or more days a week	38*	64*
Sex		
Male†	26	74
Female	31*	72
Age		
Less than 25 years†	18	76
25 to 34 years	27*	67*
35 to 44 years	34*	69*
45 to 54 years	29*	76
55 years or more	24*	82*
Children present at home		
No†	27	75
Yes	31	70
Self-reported health		
Excellent†	21	83
Very good	23	78*
Good	32*	69*
Fairly good or bad	43*	54*
Education		
High school diploma or less†	26	76
College or trade school diploma	29	74
University degree	29*	69*
Household income		
Less than $60,000†	28	73
$60,000 to $99,999	27	73
$100,000 or more	30	74
Not stated	26	73
Occupation		
Management occupations†	38	67
Professional occupations	31*	70
Technologists, technicians and technical occupations	30*	71
Clerical occupations	30*	76*
Sales and service occupations	25*	75*
Trades, transport and equipment operators and related occupations	23*	75*
Occupations unique to primary industries	21*	82*
Occupations unique to processing, manufacturing and utilities	22*	78*
Hours worked per week		
30 to 39 hours†	23	82
40 to 49 hours	24	76*
50 hours or more	40*	60*

† reference group
* statistically significant difference from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Chart 5 The likelihood of feeling trapped in a daily routine increases with commuting time



Note: For full-time workers.
Source: Statistics Canada, General Social Survey, 2010.

Workers with longer commutes less satisfied with their work–life balance

In addition to higher stress levels, longer commuting times were associated with work–life balance. Specifically, 79% of people who had commuting times of less than 15 minutes said they were satisfied or very satisfied with their balance between work and family life. This proportion declined as commuting time increased—reaching 65% among workers who took 45 minutes or more to get to work (Table 4). People whose commuting time was 45 minutes or more were also more likely to say that they had difficulty fulfilling their family responsibilities because of the time they spent at work (Chart 5). The feeling of not having enough time for family and friends also increased with commuting time.

Summary

In 2010, it took workers an average of 26 minutes to travel to work. Workers in Toronto, Montréal and Vancouver had the longest commuting times, at 33, 31 and 30 minutes respectively.

Public transit users took longer to get to work than car users living an equivalent distance from their place of work. For example, in Canada's six largest metropolitan areas, each of which has a population of at least 1 million, public transit users' average commuting time was 44 minutes. In contrast, the average commuting time for car users was 27 minutes.

Not surprisingly, traffic congestion was more common in larger metropolitan areas and affected more car users. In the major centres, public transit users were not immune from the effects of traffic congestion—in the six largest metropolitan areas, one out of five public transit users reported experiencing traffic congestion at least three days a week. This was less than the two out of five car users who were in the same situation.

In general, workers were satisfied with the amount of time it took them to travel to work. However, dissatisfaction was more common in larger urban centres, where it was observed that frequent encounters with traffic congestion had quite a large impact on the likelihood of being dissatisfied with commuting times.

Most car users (85%) had never used public transit to travel to their current place of work. Of that group, 15% believed that public transit would be convenient for them. The other 85% thought it would be somewhat or very inconvenient for them (or did not know). Of the 15% of car users who had used public transit to get to work, just under half believed that public transit would be convenient for them.

Longer commuting times were associated with higher stress levels in full-time workers. The same was true for those who often experienced traffic congestion.

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1. Québec City, Winnipeg, Hamilton, London, Kitchener, St. Catharines–Niagara, Halifax, Oshawa, Victoria and Windsor.
2. These results were confirmed by a linear regression model, based on the worker population in the largest metropolitan areas. The independent variables in the model were distance, distance squared, frequency of encounters with traffic congestion and mode of transportation used (car versus public transit). All these variables were statistically significant, and the regression's R^2 was 0.49. For equivalent distance and frequency of traffic congestion, public transit users took an average of 17 minutes longer to get to work than car users.

Intergenerational education mobility: University completion in relation to parents' education level

by Martin Turcotte

Introduction

In Canada, as in other parts of the world, there is a strong correlation between the education of parents and that of their children.[1] Young adults with at least one parent who completed a university degree are themselves much more likely to graduate from university. Studies have even shown that parents' education level had an even greater impact than their income level on the probability of young people pursuing and completing university.[2] There is a similar, though less clear-cut, association for college or trade school education: children whose parents pursued such studies are more likely to do so themselves.

The correlation between parents' and children's education level is attributable to a number of factors. First, from a financial perspective, future parents with more education also have higher incomes. Well-educated people tend to form unions with partners who have similar educational profiles,[3] which further contributes to family income and assets. Those financial resources make it easier for parents to put money aside and help their children pay for postsecondary education. This financial advantage is even more apparent for families in which the woman is more educated. When these women have children, they have fewer on average (and therefore are able to allocate more financial resources to each one, from early childhood to postsecondary education).

To reduce the disparity in education opportunities based on social background, governments and various foundations provide financial assistance to young people with the aptitude for university studies, but who are from lower income families. Despite such assistance programs, young people from disadvantaged areas, where fewer parents went to college or university, remain less likely to attend university and earn a degree.[4] In fact, a number of recent Canadian studies have shown that financial constraints (tuition fees or lack of financial support) only partly account for the low university participation rate of young people from lower income families.[5] Cultural factors associated with parents' education play an even more important role in this regard.

For example, according to some researchers, better-educated parents provide their children with an environment that is more conducive to their cognitive development from birth, and becomes apparent in various ways, including higher high school grades.[6] Moreover, it has been shown that children's high school reading skills and the amount of effort they put into their education—two key factors associated with postsecondary enrolment and success—are greater among children whose parents are well-educated.[7] In addition, parents who are university graduates have higher educational aspirations for their children and are more likely to transmit them to their children. For example, according to a recent study of postsecondary students from lower income families, those whose parents held a university degree were much more likely to have always known that they wanted to continue their studies after high school (about 50%, compared with 31% for those whose parents had only a high school diploma).[8]

These findings have many policy implications. A number of experts

maintain that while measures whose sole purpose is to financially assist young people from lower income families in pursuing and completing postsecondary studies are important, they are not sufficient to equalize opportunities.[9] They should be combined with policies that provide children of less well-educated parents with resources that they may not have and which are associated with academic success and pursuit of postsecondary education (greater access to cultural activities and materials, demonstration of positive values and attitudes concerning the utility of education, etc.). In short, while the causes of inequality of educational opportunities are multiple and complex, one fact remains: there is a gap in the likelihood of graduating from university between children whose parents hold a university degree and other children. But is that gap shrinking?

Over the last few decades, the proportion of young adults who hold a university degree has increased substantially. But how has the correlation between parents' and children's education changed? Has university completion among young adults, especially women, grown at the same pace among young people whose parents are less well-educated?

The object of this article is to determine whether intergenerational mobility in university completion has been increasing in recent years. In other words, it explores whether people whose parents did not graduate from university are themselves more likely to have finished university than was the case about 25 years ago, and whether the gap between them and those whose parents completed university has narrowed over time.

To address that question, data from 12 cycles of the General Social Survey from 1986 to 2009 were used. The analysis covers Canadian-born people between the ages of 25 and 39 (for more details concerning methodology and concepts, see "What you should know about this study"). For people born outside Canada, intergenerational education mobility may be affected by different factors, probably associated with the social, cultural and economic characteristics of their country of origin. Other studies have focused on the education mobility of immigrants' children.[10]

What you should know about this study

The General Social Survey (GSS), conducted annually since 1985, has two main objectives: 1) gather data on social trends in order to monitor changes in the living conditions and well-being of Canadians over time, and 2) provide information on specific social policy issues of current or emerging interest. The present study addresses those two objectives. To track changes in the relationship between parents' and children's education, data from 12 different years were used: 1986, 1994, 1995, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2008 and 2009. Those are the years in which the GSS collected information on the education level of respondents' parents. To facilitate interpretation of the tables, data are shown for only 6 GSS cycles. However, the logistic regression model includes the data from all 12 cycles.

The 25-to-39 age group is covered. Most people have usually completed their education by the age of 25. To increase the sample size, the 25-to-34 age group, which is used in many studies, was expanded to include people up to the age of 39. The sample size varied from cycle to cycle, ranging from a low of 3,007 respondents in 1994 to a high of 6,371 in 1999. In 2009, the most recent year covered, the sample consisted of 3,508 respondents, representing 5.4 million Canadian-born people from 25 to 39 years of age.

The questions used to measure parents' and respondents' education did not change from 1994 to 2009 (respondents were asked to provide their highest level of education and the highest level of education for their mother and father). In 1986, a slightly different set of questions was used to gather information about respondents' education. Nevertheless, there was no difficulty separating those who held a university degree from those who did not.

Logistic regression

Logistic regression analysis was used to determine the extent to which the education of respondents and their parents had changed over time. Data from the 12 cycles were stored in a single database, with a total of 55,700 observations.

In the logistic regression model, cycle is a continuous variable with a value between the maximum of 23 for 2009 and the minimum of 0 for 1986. For example, cycle's value is 22 for 2008, 20 for 2006, 19 for 2005, and so on. Creating a variable for interaction between cycle and the variable for the parent's education makes it possible to determine whether the correlation between the parent's education and the probability of holding a university degree became weaker during the period.

Three models were used: one for all persons aged 25 to 39, one for women in that age group and another for men.

The proportion of university graduates in the 25-to-39 age group more than doubled from 1986 to 2009

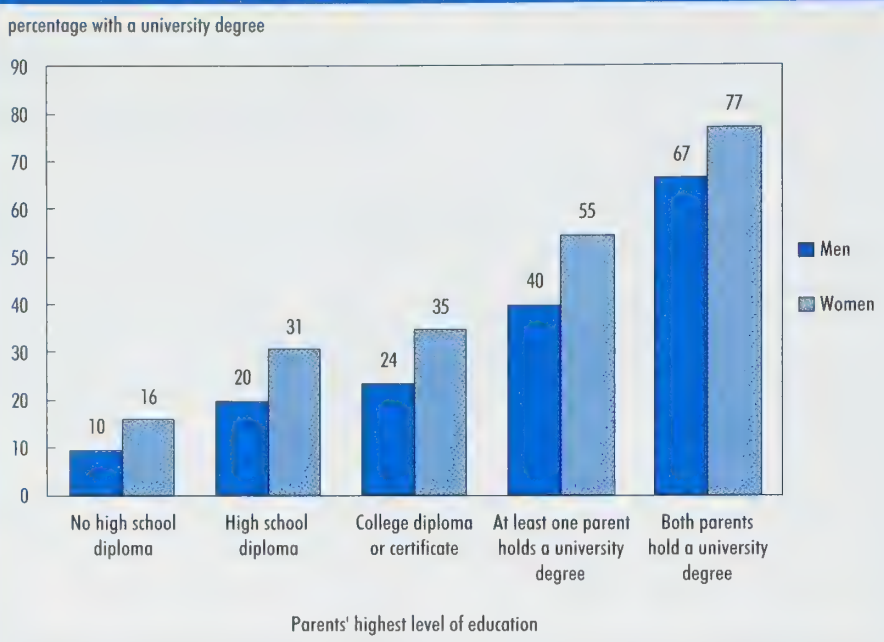
Apart from the increased participation of women in the labour market, one of the major transformations in the last quarter-century is the sharp increase in the number of university graduates in the population. Specifically, in 1986, just under 15% of Canadian-born people between 25 and 39 held a university degree; by 2009, the proportion had more than doubled to 31% (Table 1).

The increase was much larger for women than men. In 1986, men were slightly more likely than women to hold a university degree (16% and 13% respectively for Canadian-born people between 25 and 39). In 2009, however, the reverse was true: 37% of women in this age group held a university degree, compared with 27% of men (Table 1).

In 2009, the probability of holding a university degree was much higher for people with at least one parent who held a university degree (56%) than for people with neither parent holding a university degree (23%) (Table 1). The gap was even greater between people whose parents both held a university degree and those whose parents both held only a high school diploma. For men the respective proportions of university graduates were 67% versus 20%. (Chart 1).

When just one parent held a university degree, whether it was the father or the mother, there was an impact on the result for boys (the father holding a degree was more strongly correlated with their university completion). Among boys whose father held a university degree but whose mother did not, 46% were university graduates. In contrast, only 33% of boys whose mother held a university degree but whose father did not were university graduates. Among girls, whether the father or mother held a university degree was not much of a factor in their university completion (data not shown).

Chart 1 Among women aged 25 to 39 whose two parents graduated from university, 77% held a university degree in 2009



Source: Statistics Canada, General Social Survey, 2009.

It is known that the number of young adults whose parents hold a university degree is growing. The proportion of people between 25 and 39 whose parents held a university degree rose steadily from 8% in 1986 to 26% in 2009. Are people whose parents were not university graduates more likely to hold a degree than they were in the past?

Young adults with less well-educated parents were more likely to be university graduates in 2009 than in 1986

For people whose parents did not graduate from university, the probability of holding a degree nearly doubled from 1986 to 2009, from 12% to 23% (Table 1). For people with at least one parent who graduated from university, the proportion also increased, but not as dramatically, from 45% in 1986 to 56% in 2009 (1.25 times higher). Clearly, when the percentage at the beginning of the period is low, as is the case here for people whose parents do not hold a university degree, a sharp increase is more likely than when the initial proportion is higher (as is the case for children of university graduates).

The percentage-point difference in the proportion of graduates by their parents' education remained unchanged from 1986 to 2009 (about 30 percentage points). However, the relative difference declined. In 1986, the probability of earning a university degree was about four times higher for people whose parents were university graduates than for those whose parents were not (45% versus 12%, a ratio of 3.8). In 2009, the ratio was smaller, with 56% of the children of university graduates holding a degree, compared with 23% for others (2.4 times more likely).[11]

To confirm that the disparity in intergenerational education mobility has diminished over time, a logistic regression model was developed. The model is designed to test this hypothesis while controlling for factors affecting university completion that have changed over

Table 1 Percentage of people aged 25 to 39 who hold a university degree, 1986-2009

	Canadian-born persons aged 25 to 39					
	1986†	1994	2000	2003	2006	2009
	percentage with a university degree					
Total	**14.7**	**20.5***	**23.1***	**26.4***	**30.5***	**31.4***
Parents' education						
No university degree or don't know	12.0	17.0*	17.2*	20.1*	22.8*	23.0*
At least one university degree	44.7	49.3	51.1	52.1	54.7*	55.8*
Sex						
Men	16.2	19.9*	22.3*	24.2*	27.6*	26.6*
Women	13.3	21.2*	23.9*	28.6*	33.4*	36.5*
Parents' education and sex						
No university degree or don't know						
Men	13.7	15.7	16.0	17.4*	20.4*	18.1*
Women	10.3	18.3*	18.3*	22.7*	25.3*	28.0*
At least one university degree						
Men	42.5	52.4	49.3	50.6	50.2	50.1
Women	47.1	46.0	53.4	53.6	59.3*	62.0*
Parents' country of birth						
Canada	13.6	19.1*	21.2*	23.5*	27.7*	28.9*
At least one foreign-born parent	20.6	26.7	31.0*	36.4*	40.1*	40.2*
Region of birth[1]						
Atlantic	..	17.1	23.2*	23.2*	24.0*	29.3*
Quebec	..	20.7	22.7	26.4*	31.8*	30.4*
Ontario	..	22.4	24.9	29.0*	31.7*	33.7*
Prairies	..	19.2	21.8	24.7*	28.5*	29.6*
British Columbia	..	18.9	19.6	23.4	32.4*	31.3*
Mother tongue						
English	15.8	20.8*	23.6*	26.7*	29.3*	31.6*
French	11.5	18.1*	21.3*	24.3*	30.4*	29.0*
Other	24.2	30.9	26.9	32.2	42.3*	44.5*

† reference group
* statistically significant difference from reference group at $p < 0.05$
1. For region of birth, the reference group is 1994.
Source: Statistics Canada, General Social Survey, 1986, 1994, 2000, 2003, 2006 and 2009.

time (in particular, the gender effect and the widespread increase in the proportion of people with a university degree). Since people whose parents were not born in Canada are more likely to hold a university degree (Table 1), the model also controls for the parents' place of birth and the respondent's age.

The results of the analysis confirm that the relative difference in university completion between people whose parents are university graduates and people whose parents are not university graduates shrank somewhat from 1986 to 2009 (Table A.1). Factors that may have contributed to the slight decline in disparity are complex and probably numerous (a culture change regarding the value of university education, loan and scholarship programs, etc.); identifying those factors is impossible with the available data and is beyond the scope of this study. Moreover, despite the modest decrease in disparity, there remains an appreciable difference between the two groups, and a person whose parents hold a university degree is much more likely than others to complete university.

Among women whose parents do not hold a university degree, the proportion of those who are university graduates nearly tripled from 1986 to 2009

The increase in the percentage of university graduates among people whose parents did not attend university is largely attributable to women. In 1986, only 10% of women whose parents were not university graduates held a degree. By 2009, that proportion had jumped to 28%, almost triple. The gain for men was much more modest, with the corresponding proportion rising from 14% in 1986 to 18% in 2009 (Table 1).

These results show that the decline in the disparity in university completion is mainly attributable to women. Among men in 1986, the probability of completing university was 3.1 times higher for those whose parents held a university degree than for those whose parents did not hold a degree (42.5% / 13.7% = 3.1) (Table 1). In 2009, the ratio was only slightly lower at 2.8.

The situation was very different for women. In 1986, the probability of holding a university degree was 4.6 times higher for women whose parents were university graduates than for women whose parents were less-educated. By 2009, the difference between the two groups had narrowed appreciably, and the ratio between the two proportions was just 2.2 (62% / 28% = 2.2) (Table 1). This finding is confirmed in Table A.1. For women, the correlation between having parents with a university degree and holding a university degree is declining with time. For men, the corresponding result is not statistically significant.

Parents' education has less of an impact for second-generation immigrants than for the Canadian-born

Previous studies have shown that the children of immigrants (second generation) were proportionately more likely to complete university than children born in Canada.[12] The results of this study are consistent with those findings. In 2009, 40% of people aged 25 to 39 with at least one parent born outside Canada were university graduates, compared with 29% of those whose parents were both born in Canada. This difference is also evident with regard to language, as those whose mother tongue was neither English nor French were more likely to hold a university degree than others.

The results of this study also indicate that for people with at least one parent born outside Canada, social background has less of an impact on the probability of completing university (compared with people whose parents were born in Canada). These findings are consistent with the results of other studies on the subject.[13]

For example, in 2009, among people with at least one parent born outside Canada, the respective proportions of people who held a university degree were 30% for those whose parents were not university graduates and 62% for those with at least one parent who held a degree. In other words, the proportion was twice as high for people with parents who graduated from university. However, for people with two Canadian-born parents, the relative difference between those whose parents were university graduates and others was even greater (53% and 21% respectively, a proportion 2.5 times higher). The statistical model confirms these results (Table A.1). In short, having parents who graduated from university makes one more likely to be a university graduate, but the effect is smaller for second-generation immigrants.

The level of intergenerational mobility is proportionally similar in the United States and Canada

The latest data from the U.S. General Social Survey show differences in intergenerational education mobility that are very similar to those observed in Canada. For the period from 2006 to 2008, 56% of U.S.-born Americans aged 25 to 39 whose parents were university graduates held a degree themselves; that is the same proportion observed in Canada in 2009.[14] The picture was also similar for Americans whose parents did not complete university studies, with about one-quarter of them holding a university degree.

On the other hand, a study has shown that household income played a more important role in the pursuit of a university education in the United States than in Canada. Specifically, it indicated that the pursuit of a university education was less prevalent among lower income students and members of visible minorities in the United States than among their counterparts in Canada.[15] Other data show a stronger correlation in the United States than in Canada between parental income and students' high school grades.[16]

Summary

In the last 25 years, there has been a substantial increase in the number of young adults completing university. Just 50 years ago, only the elite, with some exceptions, could aspire to a university education. Disparities in university completion by family background have declined slightly in the last quarter-century. In 1986, only 12% of Canadian-born people aged 25 to 39 whose parents did not complete university held a degree. By 2009, the proportion had almost doubled, and nearly one-quarter (23%) of the people in such a situation were university graduates. Because of this increase, the relative difference between them and people whose parents held a university degree diminished between 1986 and 2009. Yet the disparities have certainly not vanished. Even today, people whose parents are university graduates are much more likely to pursue a university education than other people.

The data show clear differences between men and women. Today, women aged 25 to 39 are more likely than men in the same age group to hold a university degree. The increase was particularly dramatic among women whose parents did not attend university: in 2009, 28% of women held a degree compared with just 18% of men in the same situation. Thus, women have played a significant role in narrowing the overall gap between people whose parents are university graduates and other people.

Martin Turcotte is a senior analyst in the Social and Aboriginal Statistics Division at Statistics Canada.

1. Organisation for Economic Co-Operation and Development. 2010. "A family affair: Intergenerational social mobility across OECD Countries." *Economic Policy Reforms: Going for Growth*. Part II. Chapter 5. p. 3-20.

2. Finnie, Ross, Richard E. Mueller, Arthur Sweetman and Alex Usher. 2010. "New Perspectives on Access to Postsecondary Education." *Education Matters: Insights on Education, Learning and Training in Canada*. Vol. 7. Statistics Canada Catalogue no. 81-004-X.

3. Martin, Laetitia and Feng Hou. 2010. "Sharing their lives: Women, marital trends and education." *Canadian Social Trends*. No. 90. Statistics Canada Catalogue no. 11-008-X.

4. Some researchers have suggested that one factor that might help explain the persistent gap in access to higher education by family background is the fact that despite the availability of financial assistance, young people from lower income families have to deal with greater financial difficulties during and after their studies (mainly because their parents are unable to give them money or pay for their education directly, and because they accumulate more debt). In their view, the solution is scholarships, not loans, for young students from lower income families. For more details, see Carmichael, Lorne and Ross Finnie. 2008. "Family income, access to post-secondary education and student grants: Why equal access requires more than loans." *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. R. Finnie, R.E. Mueller, A. Sweetman and A. Usher (eds.). Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press. p. 347-368.

5. Finnie, R., R.E. Mueller, A. Sweetman and A. Usher. 2008. *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press.

   However, family financial resources are not inconsequential. See also Frenette, Marc. 2007. *Why Are Youth from Lower-income Families Less Likely to Attend University? Evidence from Academic Abilities, Parental Influences, and Financial Constraints*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 295.

6. For example, see Finnie et al. 2010.

7. Finnie, Ross and Richard E. Mueller. 2008. "The backgrounds of Canadian youth and access to post-secondary education: New evidence from the Youth in Transition Survey." *Who Goes? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. R. Finnie, R.E. Mueller, A. Sweetman and A. Usher (eds.). Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press. p. 79-107.

8. Finnie, Ross, Stephen Childs and Andrew Wismer. 2010. *When Did You Decide?* Version 02-24-10. A MESA Project L-SLIS Research Brief. Toronto, Ontario. Canadian Education Project.

9. For example, see Finnie, Ross, Marc Frenette, Richard E. Mueller and Arthur Sweetman. 2010. *Pursuing Higher Education in Canada: Economic, Social and Policy Dimensions*. Queen's Policy Studies Series. Montréal and Kingston. McGill-Queen's University Press.

10. For example, Abada, Teresa, Feng Hou and Bali Ram. 2008. *Group Differences in Educational Attainment Among the Children of Immigrants*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 308.

11. Note that intergenerational mobility as measured by the difference in university graduation rates from one generation to the next does not reflect the possible inflation of some degrees to obtain similar jobs. There is certainly an increase in the proportion of graduates, but intergenerational mobility does not necessarily lead to more income. Moreover, the increase in intergenerational mobility may vary by field of study. It is, however, impossible to test this hypothesis with data from the General Social Survey.

12. Abada et al. 2008.

13. For example, Aydemir, Abdurrahman, Wen-Hoo Chen and Corak Miles. 2008. *Intergenerational Education Mobility Among the Children of Canadian Immigrants*. Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 316.

14. Since the U.S. General Social Survey had a smaller sample than its Canadian counterpart, two data cycles were combined to produce these estimates. The required survey weights are provided with the U.S. General Social Survey's available data (see http://www.norc.uchicago.edu/GSS+Website/).

15. Frenette, Marc. 2005. "Is Post-Secondary Access More Equitable in Canada or the United States?" Analytical Studies Branch Research Paper Series. Statistics Canada Catalogue no. 11F0019M – No. 244.

16. Organisation for Economic Co-Operation and Development. 2010.

Table A.1 Logistic regression of factors associated with the likelihood of holding a university degree for people aged 25 to 39

	Total		Women		Men	
	coefficient	odds ratio	coefficient	odds ratio	coefficient	odds ratio
Constant	**-2.06***	**0.13**	**-1.83***	**0.16**	**-2.51***	**0.08**
Cycle (continuous variable)[1]	0.02*	1.02	0.05*	1.05	0.02*	1.02
Respondent's age (continuous variable)	0.00	1.00	-0.01*	0.99	0.01*	1.01
Parents' education						
No university degree or don't know†	...	1.00	...	1.00	...	1.00
University degree	1.86*	6.40	1.95*	7.06	1.76*	5.83
University degree * cycle	-0.01*	0.99	-0.02*	0.98	-0.01	0.99
Sex						
Men†	...	1.00	...	...	...	...
Women	-0.19*	0.83	...	...	...	...
Women * cycle	0.03*	1.03	...	...	...	...
Parents' country of birth						
Canada†	...	1.00	...	1.00	...	1.00
At least one foreign-born parent	0.67*	1.95	0.59*	1.80	0.74*	2.10
Interaction between parents' country of birth and parents' education						
Parent born outside Canada * parent has a university degree	-0.42*	0.66	-0.48*	0.62	-0.36*	0.70
Interaction between parents' country of birth and the cycle						
Parent born outside Canada * cycle	0 00	1.00	0.00	1.00	-0.01	0.99

† reference group

* statistically significant difference from reference group at $p < 0.05$

1. For an explanation of the cycle variable, see "What you should know about this study."

Source: Statistics Canada, General Social Survey, 1986, 1994, 1995, 1999, 2000, 2001, 2003, 2004, 2005, 2006, 2008 and 2009.

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What's stressing the stressed? Main sources of stress among workers

by Susan Crompton

Introduction

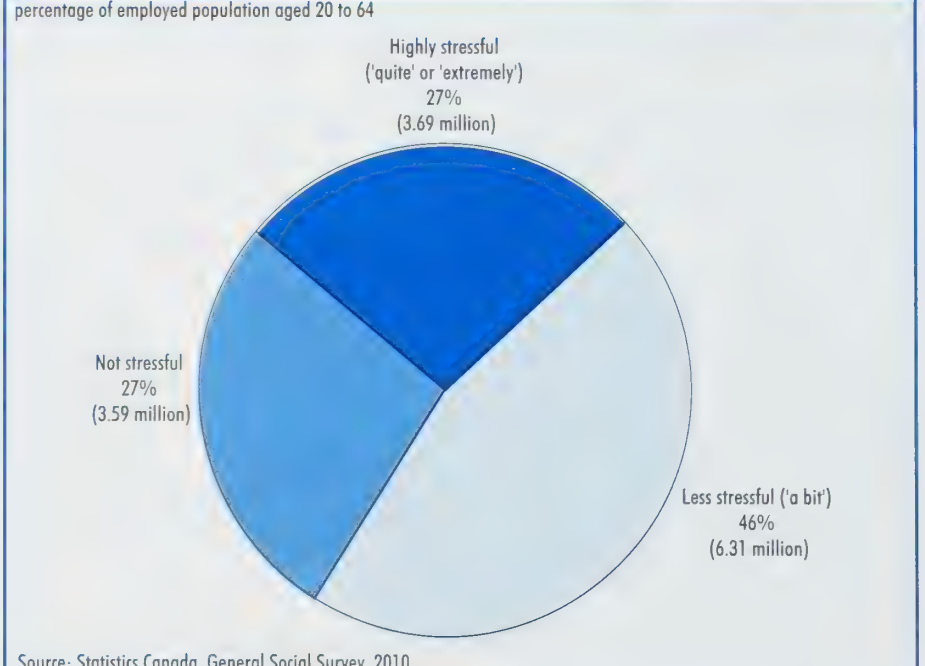
In 2010, slightly more than 1 in 4 Canadian workers described their day-to-day lives as highly stressful, according to the General Social Survey (GSS). This proportion is about the same as reported earlier in the decade by the 2005 General Social Survey and the 2002 Canadian Community Health Survey.[1] Persistently high levels of stress among such a share of the workforce present a challenge to both employers and to the health care system.

Over time, employers lose productivity to stress through absenteeism, reduced work output, and increased disability claims.[2] Mental health problems alone are estimated to cost employers about $20 billion annually[3] and account for over three-quarters of short-term disability claims in Canada.[4]

Given the economic costs of stress and stress-related illnesses, it is not surprising that much of the social science research on stress emphasizes job- and work-related stress. But about 4 in 10 highly stressed Canadian workers identify a problem other than work as the main source of their stress and when they bring it into the workplace, it can affect their performance and that of their colleagues.[5]

This article uses the 2010 General Social Survey on Time Use to examine how workers aged 20 to 64 who report being highly stressed differ from those who report being less stressed. Then, it focuses on the five main issues that highly stressed workers identified as their primary sources of stress and compares selected characteristics of these workers—for instance, differences between those who are anxious about work compared to those concerned about their finances or about a family situation.

Chart 1 Over one-quarter of working adults say their lives are very stressful



What you should know about this study

Data used in this article are from the 2010 General Social Survey (GSS) on Time Use, which interviewed Canadians aged 15 or older over living in the ten provinces. The time use cycle of the GSS monitors changes in time use, including time-stress and well-being.

This study focuses on adults aged 20 to 64 with a job in the 7 days preceding the survey and who reported that, on most days, their lives were 'quite a bit' or 'extremely' stressful. This study population comprises a sample of over 1,750 respondents representing almost 3.7 million adults.

Definitions

Worker: Respondent had a job in the 7 days preceding the survey (includes workers who were absent from their job that week because they were on vacation).

Stressed: The GSS asked respondents "Thinking about the amount of stress in your life, would you say that most days are: not at all stressful; not very stressful; a bit stressful; quite a bit stressful; or extremely stressful?"

Workers classified as **highly stressed** are those who reported that most days were 'quite a bit' or 'extremely' stressful. **Less stressed** workers are those who reported that most days were 'a bit' stressful.

Main or primary source of stress: If respondents reported that their lives were 'a bit' to 'extremely' stressful, the GSS then asked "What is your main source of stress?" Responses were then classified into the following categories: work; financial concerns; family; not enough time; health; school work; and other, which included issues such as relationship problems, isolation, obligations and responsibilities, and general worry and anxiety.

There are 5 categories of main source of stress presented in this article: work, financial concerns, family, not enough time, and personal and other. The category 'personal and other' combines the health, school work and other response categories to the main source of stress question since the sample sizes are too small to conduct separate analyses for each category.

White-collar jobs: include management and professional occupations; technologists, technicians and technical occupations.

Pink-collar jobs: include clerical and sales and services occupations.

Blue-collar jobs: include trades, transport and equipment operators and related occupations; occupations unique to primary industries; and occupations unique to processing, manufacturing and utilities.

The logistic regression model

In order to isolate the individual factors associated with different levels of stress, a logistic regression model was developed to estimate the odds that a respondent with a given characteristic reported being **highly stressed** rather than **less stressed**, while removing the effect of other factors. The model excludes workers who reported no stress.

The odds ratios were estimated through a weighted regression that used GSS survey weights, with variance estimation done through survey bootstrapping. Statistical significance was calculated at $p < 0.05$ (Table A.1).

Over 1 in 4 workers report being highly stressed

According to the 2010 General Social Survey (GSS), 27% of Canadian workers described their lives on most days as 'quite a bit' or 'extremely' stressful. This means that almost 3.7 million working adults went through a regular day feeling a high level of stress (Chart 1). Another 6.3 million (46%) said they were 'a bit' stressed. (See *What you should know about this study* for information about data and terms.)

Tolerance for stress can differ from one person to another. Medical and psychological research show that responses to chronic stress can be influenced by the nature of the stressor[6] and that a person's temperament and personality can alleviate or exacerbate its effects.[7] However, the way an individual has learned to cope with stress plays an important role in his or her response to potentially difficult events.[8]

The following paragraphs focus on workers who reported at least some level of stress (73% of all working adults aged 20 to 64). Among these stressed workers, 37% reported that they were highly stressed and 63% that they were less stressed. Among the stressed workers who described their mental health as less than good, almost two-thirds (62%) reported that they were highly stressed. Among workers who thought their mental health was excellent, the figure was 27%. The same pattern holds with

respect to physical health, although the gap is considerably smaller—49% compared to 32% (Table 1).

Workers employed in management, professional and clerical occupations were more likely to report being highly stressed than those in blue-collar jobs. Being self-employed and having a household income under $40,000 or over $80,000 somewhat increased the likelihood of being highly stressed.

Workers with one or two children were more likely than those without children to describe their lives as quite or extremely stressful. Similarly, workers who were divorced or living common-law had a greater probability of being highly stressed. Workers who had immigrated between 1980 and 1995 were also more likely to be highly stressed than those born in Canada.

A worker's sex and level of education did not affect the probability that he or she would report that their life was quite or extremely stressful.

When a logistic regression model was used to isolate the factors associated with the odds of being a highly stressed worker, five characteristics remained significant: mental health, occupation, marital status, immigrant status and physical health (Table A.1).

This general portrait of highly stressed workers is useful but it can be refined. How different are workers who are highly stressed about their job from workers who are highly stressed about their finances? Are they a lot different from workers who are highly stressed about not having enough time in their day? The remainder of the article focuses on the primary sources of stress reported by workers who describe their lives as quite a bit or extremely stressful.

Six in ten highly stressed workers identify work as their main source of stress

The majority of highly stressed workers (62%) identified work as their main source of stress. Clustered far behind were financial concerns and not having enough time (both at 12%), family matters, and personal and other issues such as relationships, health and generalized worries (Chart 2). These proportions are very similar to those reported in 2005.

That so many working Canadians would feel very stressed about work is not surprising: they are on the job for a substantial part of the day; it consumes a great deal of their mental and often physical energy; and they must meet those challenges year after year.

Other issues identified by highly stressed workers may not be related to their job situation, but they can produce the same negative effects. All types of long-term stress increase the risk of being diagnosed with anxiety and depression[9] and chronic physical illness.[10]

Workers stressed mainly about work are well-educated and have white-collar jobs

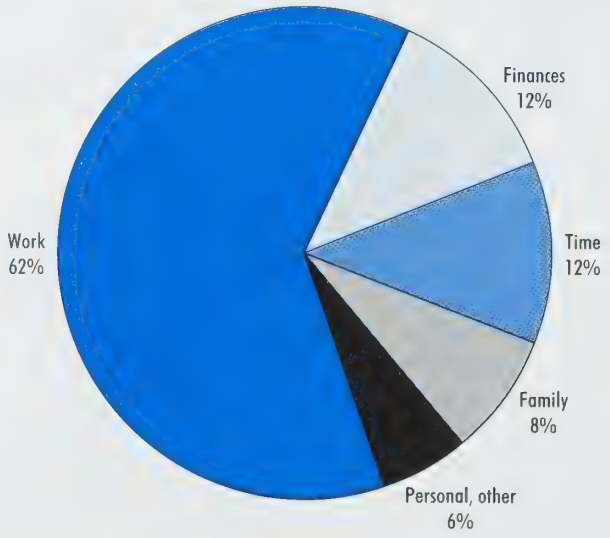
Highly stressed workers who identified their job or workplace as their main source of stress were well-educated—almost three-quarters had a college or university education—and over one-half held white-collar jobs in management, professional or technical occupations. Given this background, it is not surprising that the largest group (45%) reported a household income of $100,000 or more; only 17% had incomes under $60,000. More than 8 in 10 were paid employees (Table 2).

The majority were men (55%) and the largest group was aged 35 to 49 (43%). About three-quarters lived with a spouse or partner, but just under one-half had children in the household. In terms of household type, 43% lived with their spouse and children, 29% lived with their spouse only, 9% lived alone, 4% were lone parents, and 16% lived in some other type of household.

About three-quarters of highly work-stressed workers lived in a metropolitan area. Almost 9 in 10 had been born in Canada or were immigrants who had lived in Canada for at least 30 years.

Chart 2 Work is the main source of stress for 6 in 10 highly stressed workers

percentage of highly stressed employed population aged 20 to 64



Source: Statistics Canada, General Social Survey, 2010.

Table 1 Proportion of employed stressed adults aged 20 to 64 reporting that life is highly stressful, by selected characteristics, 2010

	Most days are 'quite' or 'extremely' stressful
	percentage
Sex	
Men†	36
Women	38
Age group	
20 to 29 years†	31
30 to 39 years	39*
40 to 49 years	38*
50 to 64 years	38*
Marital status	
Married†	36
Common-law union	44*
Widowed	F
Divorced or separated	44*
Single (never-married)	33
Children in the household	
None†	35
One or two children	39*
Three or more children	40
Household type	
Couple with children†	39
Couple only	36
Unattached individual	40
Lone parent	42
All other arrangements	32*
Place of residence	
Census metropolitan area (CMA)†	38
Census agglomeration (CA)	35
Outside CMA or CA	34*
Occupation	
Management	46*
Professional	38*
Technical	37
Clerical	39*
Sales and services	34
Blue-collar†	33
Class of worker	
Paid employee†	36
Self-employed	41*
Education	
Less than high school	36
Secondary school†	36
Some postsecondary	35
College diploma, trade or vocational certificate	38
University degree	37
Household income	
Less than $40,000†	42
$40,000 to $59,999	33*
$60,000 to $79,999	34*
$80,000 to $99,999	39
$100,000 or more	38
Not stated, do not know	36
Immigrant status	
Born in Canada†	36
Immigrated to Canada before 1980	31
Immigrated to Canada between 1980 and 1995	47*
Immigrated to Canada between 1996 and 2010	39
Visible minority status	
Visible minority	37
Non-visible minority†	40
Physical health	
Excellent†	32
Very good	31
Good	40*
Fair to poor	49*
Mental health	
Excellent†	27
Very good	31
Good	42*
Fair to poor	62*

† reference group
* significantly different from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Table 2 Selected characteristics of employed adults aged 20 to 64 reporting higher levels of stress, by main source of stress, 2010

	Main source of stress				
	Work†	Finances	Not enough time	Family	Personal and other
	percentage of highly stressed workers				
Sex					
Men	55	63	52	33*	45
Women	45	37	48	67*	55
Age group					
20 to 34 years	29	23	24	21E	26E
35 to 49 years	43	51	48	44	49
50 to 64 years	28	26	29	35	25E
Lives with spouse or partner	74	68	82*	71	62
Children in the household					
None	51	35*	26*	38*	56*
One or two children	41	51*	59*	49	39
Three or more children	8	14E	14E	F	F
Household type					
Couple with children	43	52*	55*	48	38
Couple only	29	11E*	16E*	16E*	22E
Unattached individual	9	7E	6E*	7E	10E
Lone parent	4	8E*	F	F	F
All other arrangements	16	20E	17E	22E	F
Lives in a census metropolitan area (CMA)	74	69	69	73	76
Occupation					
White-collar	53	29*	45	43	46
Pink-collar	31	39	33	39	38
Blue-collar	16	32*	22E	18E	F
Postsecondary education					
Less than postsecondary completion	27	46*	26	38*	38
College diploma, trade or vocational certificate	35	37	38	29	17E*
University degree	38	17E*	36	33	45
Household income					
Less than $60,000	17	40*	20	25	25E
$60,000 to $99,999	25	25	24	28	27E
$100,000 or more	45	18E*	43	34*	33E*
Not stated, do not know	12	16E	13E	13E	F
Paid employee	84	75*	84	88	81
Born in Canada or immigrated to Canada prior to 1980	87	72*	84	77*	76
Non-visible minority	88	73*	87	79	79

† reference group
* significantly different from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Taking stress to work

In June 2011, the federal government announced that it would provide funding to the Canadian Mental Health Commission to help develop new voluntary standards to safeguard psychological health and safety in the workplace.[1] The action is part of an ongoing response to the prevalence of depression and anxiety reported by Canadian workers.

Mental health is highly correlated to chronic stress. Numerous studies link chronic stress to anxiety, depression, insomnia, fatigue and substance abuse.[2] Chronic stress can cause memory loss[3] and can change the brain's structure and functioning, affecting a person's susceptibility to depression and the effects of aging.[4] Long-term stress is also highly correlated with the development and progression of many chronic physical diseases,[5] such as heart disease,[6] arthritis, ulcers, asthma and migraine.[7]

Work-related stress has been the focus of much of the public discussion about chronic stress and mental health. Numerous studies have identified some of its key causes—including having little control over the terms and conditions of the work one is doing, occupying a job that does not match one's skills and abilities (either too demanding or not demanding enough), and having insufficient support from supervisors and/or colleagues.[8]

Of course, other issues can just as easily cause stress. Most commonly discussed in the context of public policy is the stress related to 'work-life balance'—the conflict that can arise between an individual's work and family responsibilities, especially among people trying to meet high expectations in both domains.[9]

Other issues have nothing to do directly with a worker's job situation, but can nevertheless affect the workplace. Unhappy relationships can be linked to high levels of stress,[10] while the demands of parenting (especially young children) produce high levels of chronic stress in some families.[11] More emotionally perceptive people seem to be at greater risk for deteriorating mental health if they are exposed to ongoing stress.[12] Women, especially young women, generally experience more stress related to relationships, illness and social networks than men of the same age, although all types of stress increase the likelihood of anxiety and depression for both women and men.[13] Recent research suggests that depression can be 'transmitted' from one person to another within a social network,[14] and that people living in cities are more sensitive to the negative effects of stress than those living in rural areas.[15]

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Workers anxious about finances have less skilled jobs and lower incomes

Working adults whose high level of stress was mainly due to financial concerns were much less likely than the work-stressed to have a postsecondary education (54%). Almost 4 in 10 had a pink-collar job working in sales or services; only 29% were employed in white-collar occupations. They had a much higher probability of being self-employed (25%) and were twice as likely to have a household income below $60,000 (40%). All these factors may contribute to understanding why they were worried about money.

The highly financially-stressed were also significantly different than the work-stressed across several socio-demographic dimensions. A much larger proportion of them (65%) had children at home, they were more likely to be members of a visible minority group (27%) and to have immigrated to Canada within the last 30 years (28%).

Workers without enough time have children at home

Highly stressed workers without enough time were much more likely than the work-stressed to live with their spouse and children (55%). In most other respects, though, the time-stressed were not significantly different from the work-stressed, that is, they were well-educated and tended to have higher incomes. They generally held white-collar jobs and most had been born in Canada or immigrated here before 1980 (Table 2).

Most workers stressed about family matters are women

Two-thirds of highly stressed workers who identified family as their main source of stress were women. Compared to the work-stressed, workers who were most stressed about family issues were more likely to have children at home (62%). They were also more likely to report household income under $100,000 (53%), to have less than postsecondary education (38%) and to be immigrants who had settled in Canada in the 30 years preceding the survey.

Workers highly stressed for personal reasons are much the same as the work-stressed

Workers who attributed their stress to personal and other reasons were concerned about a wide array of issues, including health, relationship problems, isolation, the pressure of fulfilling obligations and responsibilities, and general unspecified worry and anxiety. The socio-demographic characteristics of this group of workers is different from the work-stressed only in that they were more likely to live without children (56%) and less likely to have income of $100,000 or more (Table 2).

Summary

The prevalence of stress reported by Canadian workers is of interest to both employers and governments. Research shows that stress-related physical and mental health issues cost employers billions in claims and lost productivity poses challenges for the health care system, and cause distress to workers and their families.

In Canada, in 2010, 27% of working adults reported that, on most days, their lives were 'quite' or 'extremely' stressful. Workers had higher odds of being highly stressed if they described their physical or mental health as not very good; if they had management, professional or clerical jobs; if they were living common-law or were divorced; or if they were immigrants who had arrived in Canada between 1980 and 1995.

Over 6 in 10 highly stressed workers identified work as the main source of their stress; these people were generally well-educated, employed in white-collar occupations, and reported high household incomes. Less common sources of stress were financial concerns, not having enough time, family, and personal and other issues.

Workers' demographic and socio-economic characteristics differed marginally depending on the source of their stress. For example, compared to workers who were highly stressed about work, those who were stressed about their finances were less educated and much less likely to have white-collar jobs; those worried about not having enough time were much more likely to be parents with children at home; family-stressed workers were about 1.5 times more likely to be women; and those worried about personal issues were less likely to be living with children.

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Table A.1 Odds of reporting high levels of stress compared to less stress, employed adults 20 to 64, 2010

	odds ratios
Sex	
Male†	1.00
Female	0.99
Age group	
20 to 29 years†	1.00
30 to 39 years	1.31
40 to 49 years	1.23
50 to 64 years	1.35
Marital status	
Married†	1.00
Common-law union	1.54*
Widowed	1.24
Divorced or separated	1.50*
Single (never-married)	1.06
Children in the household	
None†	1.00
One or two children	1.13
Three or more children	1.30
Place of residence	
Census metropolitan area (CMA)†	1.00
Census agglomeration (CA)	0.90
Outside CMA or CA	0.88
Immigrant status	
Born in Canada†	1.00
Immigrated before 1980	0.61*
Immigrated 1980 to 1995	1.48*
Immigrated 1996 to 2010	1.16
Occupation	
Management	1.89*
Professional	1.27*
Technical	1.45
Clerical	1.44*
Sales and services	1.15
Trades and occupations unique to primary industries and manufacturing†	1.00
Class of worker	
Paid employee†	1.00
Self-employed	1.23
Education	
Less than postsecondary completion†	1.00
College diploma, trade or vocational certificate	1.04
University degree	0.95
Household income	
Less than $40,000†	1.00
$40,000 to $59,999	0.75
$60,000 to $79,999	0.79
$80,000 to $99,999	1.03
$100,000 or more	1.06
Physical health	
Very good to excellent†	1.00
Good	1.24*
Fair to poor	1.23
Mental health	
Very good to excellent†	1.00
Good	1.67*
Fair to poor	3.70*

† reference group
* significantly different from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2010.

Personal networks and the economic adjustment of immigrants

by Derrick Thomas

Introduction

For two decades, Canada has maintained comparatively high levels of immigration[1] and almost 1 in 4 adults in this country is now foreign-born. Labour market needs are a key consideration in determining how many immigrants are admitted to Canada each year.[2] More immigrants are now selected for their training and job skills and they come from a wider variety of source countries than in the past. Despite being more highly educated, however, recent immigrants are having more difficulty adjusting to the Canadian economy than did their predecessors. It is taking newcomers longer to achieve employment and income levels similar to those of the Canadian-born.[3]

In searching for explanations, researchers have looked at aspects of human capital such as language ability, literacy, education and work experience. But these factors do not fully account for the fact that many recent immigrants do not earn incomes commensurate with those of other Canadians.[4] Other attempts to explain immigrants' diminishing relative earnings have focused on problems with the recognition of foreign credentials,[5] intangible characteristics like individual drive and ambition,[6] and institutional or sectoral change in the Canadian economy.[7]

A factor that has not often been considered is the social capital of immigrants—that is, the personal networks[8] that they are able to mobilize in their economic interests. While social capital may be more difficult to measure than human capital, it is also widely thought to be associated with economic success.[9] The social capital of individuals is usually quantified in terms of the size and diversity of their personal network of friends or contacts.

Although few surveys have gathered such data, in 2008, Statistics Canada's General Social Survey (GSS) collected cross-sectional data on the social networks of a broad range of Canadian adults. The data afford an opportunity to compare the size and structure of the networks of both immigrants and the Canadian-born. Using the GSS data, this article examines whether the personal networks of immigrants, along with more typically used measures of human capital, might explain differences in employment and earnings. Do personal networks shed any light on the gap in employment rates and income levels between immigrants and other Canadians? Are more limited personal networks associated with lower employment rates and incomes among Canada's more recent immigrants?

Cross-sectional data can present some limitations. The criteria for selecting or admitting immigrants have changed over time, as have the countries from which immigrants have arrived and their reasons for coming to Canada. Thus one cannot clearly distinguish in the cross-sectional data the effects of an immigrant's age, time in Canada or arrival cohort. Similarly, without longitudinal data allowing events to be ordered, it is difficult to tell whether recent immigrants are less often employed than other Canadians because they have more limited personal networks, or if immigrants have more limited personal networks because they are less often employed.

Understanding social capital and personal networks

Social scientists use the term 'social capital' to describe the material advantages a person derives from connections with

What you should know about this study

Source of data

Data for this study are from Cycle 22 of the General Social Survey (GSS) conducted in 2008, which collected information on the social networks of Canadians. Its target population included every person aged 15 and over residing in one of the ten provinces and not a full-time resident of an institution. Note that people who were unable to answer the questions in English or French were not interviewed, they were considered non-respondents. While they constitute a small part of the Canadian population, those unable to speak an official language represent a significant proportion of the recent immigrant population. The fact that the survey did not collect data for such people can bias the results but in a way that is predictable given the association between language ability and the capacity to communicate, make friends, find a job and earn income: the social networks, employment rates and incomes of foreign-born Canadians are likely to be overestimated in the survey sample.

The analysis focused on 17,934 respondents aged 18 to 75, of which 14,980 were Canadian-born and 2,954 were foreign-born.

Definitions

Canadian-born: Persons who were born in Canada, including persons born abroad but who were Canadian citizens at birth (e.g. children born to Canadian diplomats or defence personnel).

Immigrant/foreign-born: Persons who were born abroad, including landed immigrants and temporary residents such as refugee claimants, students and temporary workers. Landed immigrants represent 90% of the foreign-born sample. The terms 'foreign-born' and 'immigrant' are used interchangeably in this article.

Physical, human and social capital: Economists distinguish different forms of capital: physical, human and social. **Physical capital** consists of equipment, buildings, money and resources owned by employers or firms. **Human capital** belongs to the individual worker and consists of things like education and work experience. **Social capital** is an individual's personal network of contacts. Employers own physical capital and compete for workers who possess the most effective human and social capital, the factors which drive employment prospects and wages.

Personal or social network: All the contacts through which an individual might receive information or support of any kind. In this article, a personal network includes **close relatives** (excluding members of one's household); **close friends** (people with whom the respondent felt at ease, could talk to about what was on their mind or call on for help); and more distant or **other friends** (acquaintances). The terms "personal network" and "social network" are used interchangeably.

Size of network: The size of a respondent's personal network was determined by the total number of contacts (including close relatives, close friends and other friends) reported to interviewers.

Strength of ties: The 2008 GSS asked about the number of relatives (excluding household members) and the number of friends to whom the respondent felt close. A high ratio of close relatives and friends to the total number of contacts distinguishes a network characterized by strong ties. The survey also asked about the frequency of contact with friends and relatives: people in daily contact can also be said to have strong ties to their network. To measure strength of ties, a dichotomous indicator was set to '1' for those who had daily contact with friends and relatives and to '0' otherwise.

Network diversity: The variety of occupations within which the respondent had contacts, including acquaintances. Respondents were asked if they knew at least 1 person in each of 18 occupations. The number of different occupations among which they had contacts is a measure of network diversity. The 2008 GSS questionnaire used a "position generator"[1]: the diversity count was the number of occupations receiving a 'yes' answer to the following question:

"*Do you know any...*? social workers; police officers or firefighters; food or beverage servers; landscaping or grounds maintenance workers; managers in sales, marketing or advertising; computer programmers; instructors or leaders in recreation and sport; security guards; engineers; farmers; nurses; janitors or caretakers; accountants or auditors; graphic designers or illustrators; delivery or courier drivers; childhood educators or assistants; sewing machine operators; or carpenters."

Non-participants in the labour force and the unemployed: Persons who had no job and had not looked for one in the past month were considered non-participants in the labour force. Those who had not worked in the past

What you should know about this study (continued)

week but had looked for work at some point during the past four weeks were considered unemployed.

Analysis models

Probit model

In this article, a probit model was used to determine the likelihood that a person would be employed, depending on a number of characteristics (see Table A.1). The probit coefficient for each chosen characteristic (e.g. sex, age, education) shows its contribution to the likelihood of being employed in relation to the other characteristics. The coefficient measures the impact of a particular characteristic on employment, while holding constant all other independent variables. A positive coefficient means that the characteristic is associated with a higher probability of employment; a negative coefficient indicates a lower probability. The magnitude of the coefficient shows how much an individual with that characteristic differs from the reference group. For example, in Model 2, having a university degree has a coefficient of 0.306, while having high school or less, as the reference group, is given a coefficient of 0. On the other hand, 'college diploma', with a coefficient of 0.205, is more strongly related to employment than 'high school or less' but not as strongly as 'university degree'.

In order to calculate the probability that an individual with a given set of characteristics will be employed, all the coefficients for that set of characteristics are combined together with a constant that expresses the base probability of employment for all respondents. In order to isolate and examine the effects of time in Canada and network diversity all the other characteristics were held at their most typical or average value. The illustration in Chart 2, for example, is for a 40-year-old married male with a postsecondary diploma who lives in a census metropolitan area, has a mother tongue other than English or French and is a member of a visible minority group. However, one could use the same coefficients to calculate the probability of employment for an individual with any set of characteristics.

Regression model

The impact of social capital and various kinds of human capital on annual income is explored using ordinary least squares (OLS) regression analysis (see Table A.2). The dependant variable is actually the natural log of earnings as this corrects for skewness in the raw measure. A quadratic term for age is included along with the original term as the effect of age is not linear and tends to dampen with time. Most of the other terms are dichotomies which reflect the presence or absence of a characteristic. The technique was initially pioneered by Mincer for the study of human capital (see Note 18).

1. "...the Position Generator has not only proven to be a consistently constructed, but also a popular and consistently applied method for the measurement of social capital." See Van der Gaag, Martin, Tom A. B. Snijders and Henk D. Flap. 2004. "Position generator measures and their relationship to social capital measures". Joint research project of the universities of Utrecht, Groningen and Amsterdam, Dutch Organization for Scientific Research project number 510-50-204.

family, friends and acquaintances. Social capital is about the personal networks of individuals. It consists mainly in "...a durable network of more or less institutionalized relationships of mutual acquaintance and recognition."[10]

Employers invest in capital in anticipation of a return. While physical capital (land, buildings and equipment) is owned by employers, human and social capital belong to the workers themselves; they own their education, skills, work experience and personal networks.[11] Employers must compete for—and be willing to pay a premium for—workers with a large and varied network of contacts; such workers can give a business wider access to markets, suppliers and innovative ideas. Networks can also reduce the cost of searching for a qualified and dependable employee if a mutual contact can vouch for the prospective employee. Personal networks are, in short, conduits for information on wages, jobs and business prospects. For these reasons, personal networks are thought to lead to better jobs and higher earnings.[12]

Personal networks and economic success are potentially linked in a number of ways. Individuals may gain useful contacts through their employment or through the opportunities afforded by higher income. Individuals can also mobilize their existing personal networks in order to find a job or a better job.

Research distinguishes between strong and weak ties in personal networks.[13] Strong ties are those with close relatives and friends—the people with whom one shares a bond of intimacy and relatively frequent contact. People in a network

of strongly tied individuals are all apt to know each other well. While strong ties may provide social and emotional support, a network of more weakly connected individuals is thought to be more effective in generating economic benefits. Strongly tied people might share the same information and resources while acquaintances outside one's close circle may pass on unique information on economic or employment opportunities.[14] Therefore, personal networks are thought to be more valuable if they are diverse, that is, contain connections with individuals from a variety of different networks.[15]

Immigrants had smaller and less diverse social networks

People immigrating to Canada often leave family and friends behind and must reconstruct their social networks in their adopted country. According to the 2008 GSS, the social networks of the foreign-born are smaller and less diverse than those of the Canadian-born. Excluding members of their households, the foreign-born had, on average, fewer relatives to whom they felt close. They also had fewer close friends and other friends compared with people born in Canada (Table 1).

Individuals born in Canada had, on average, a network consisting of 49 relatives and friends, while those born abroad averaged 41 contacts (Table 1). Men tended to report more contacts than women and personal networks tended to decline in size as people aged.

The foreign-born tended to describe a smaller proportion of their relatives and friends as close and had less frequent contact with their network. For example, about 43% of the foreign-born stated that they were in daily contact with relatives and friends, compared with 48% of the Canadian-born (Table 1).

Social networks can also be characterized by the degree to which people participate in organizations and associations. In general, people born outside Canada were less likely to be a member of or participate in an organization. About 57% of the foreign-born were involved in at least one group, compared with 67% of Canadian-born. The types of groups they were involved with also differed. People born outside Canada were more likely to belong to a religious group than were the Canadian-born and were just as likely to participate in a political or cultural group. They were less likely to be in a union or professional association, a sports group or a community organization.

The networks of the foreign-born were also less diverse in terms of the number of different occupations held by their acquaintances. Respondents were asked if they knew anyone who worked in each of 18 distinct occupations. (For the list of occupations, see "Network diversity" in "What you should know about this study".) According to the data, the foreign-born knew at least 1 person in an average of 9 different occupations. Those born in Canada knew people in about 11 different occupations (Chart 1 and Table 1).

The size and diversity of personal networks did not differ substantially across broad categories of immigrants (such as refugees, family members being reunited, and skilled workers, selected under the points system).[16] Among the foreign-born, members of visible minority groups had less diverse networks than others.

Social networks of immigrants differed according to time in Canada

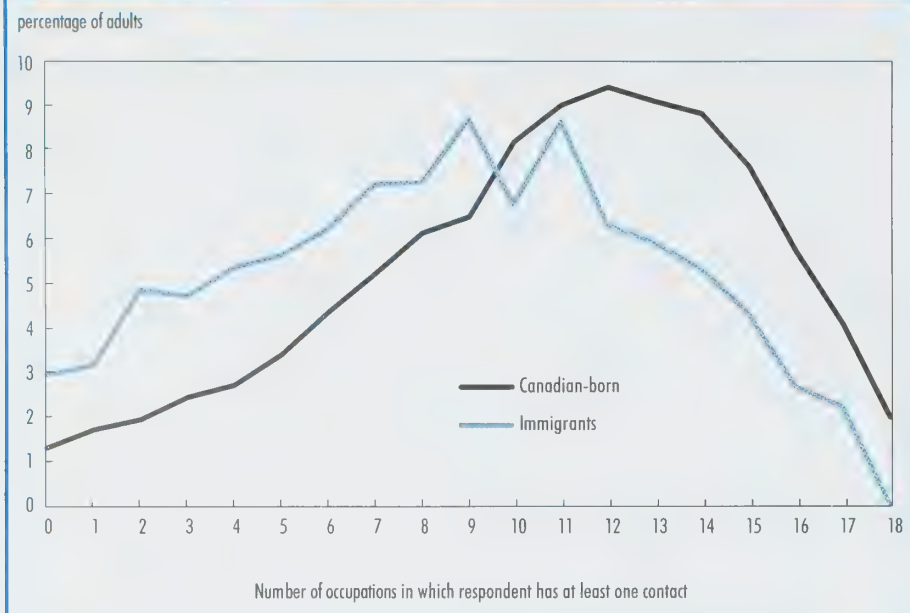
Having smaller and less diverse personal networks might be a temporary issue for newcomers. Immigrants can build up their networks in Canada over time. They may make friends, join organizations or otherwise associate with a more diverse array of people.

Table 1 Social networks of foreign-born and Canadian-born adults aged 18 to 75

	Foreign-born	Canadian-born†
	average number	
Contacts		
Friends and relatives	**40.9***	**48.6**
Close relatives	6.8*	7.6
Close friends	5.8*	6.2
Other friends	28.3*	35.0
Contacts in city of residence		
Close relatives	2.8*	3.2
Close friends	3.9*	4.3
Other friends	17.7*	22.1
Diversity of network		
Different occupations among contacts	8.6*	10.6
	average percentage	
Strength of ties		
Contacts considered close	40.9*	44.2
	percentage	
Frequency of contact		
Have daily contact with friends and relatives	43.0*	48.4
Membership in organizations		
Member of at least one organization	57.4*	67.2

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2008.

Chart 1 Immigrants tend to have contacts in a smaller number of occupations



Source: Statistics Canada, General Social Survey, 2008.

Table 2 Social networks of foreign-born adults aged 18 to 75, by time in Canada

	Years in Canada		
	Less than 5	5 to 9	10 or more†
	average number		
Contacts			
Friends and relatives	**37.7**	**36.7**	**42.3**
Close relatives	6.0	6.9	6.9
Close friends	5.2	5.6	5.9
Other friends	25.6	24.5	29.5
Contacts in city of residence			
Close relatives	1.7[E]*	1.5*	3.6
Close friends	2.7*	3.8	4.1
Other friends	10.7*	14.3*	19.6
Diversity of network			
Different occupations among contacts	7.4*	7.9*	9.0
	average percentage		
Strength of ties			
Contacts considered close	47.6	44.6	43.7
	percentage		
Frequency of contact			
Have daily contact with friends and relatives	41.7	45.0	42.7
Membership in organizations			
Member of at least one organization	44.6*	51.5*	60.6

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2008.

Some aspects of the networks of immigrants differed according to when they arrived in Canada. Immigrants seemed to build more diverse personal networks the longer they lived in Canada. They tended to know people in a wider range of different occupations, even after controlling for age, sex, mother tongue and residence in a major city.

As well, the proportion of immigrants who were members of at least one organization, association or club was larger for those who had been in Canada 10 years or more than it was for recent immigrants. However, there was no difference between the overall size of the networks of recent immigrants and that of immigrants who had been in Canada for 10 years or more. But immigrants did tend to know more people in their city of residence the longer they lived in Canada (Table 2).

Employment among immigrants was associated with the diversity of their social network

Finding a job is a key aspect of economic success in Canada. Much of the literature related to job searching in North America and Europe[17] mentions the importance of personal networks. Canadian data from the 2008 GSS indicate that just over 26% of both Canadian-born and foreign-born workers had relied, at least partly, on relatives and friends to find their main job.

The GSS 2008 asked participants to identify the strategies they used to find their main job. Immigrants were more likely to be self-employed than the Canadian-born. They were less likely than the Canadian-born to contact an employer or to be recruited directly by an employer. They were more likely to use the help of close friends to find employment. Immigrants also used the internet more often. While other relatives were just as important for immigrants as for the Canadian-born, the parents of immigrants were less likely to have assisted in the job search (perhaps because they might live outside Canada) (Table 3).

To calculate the probabilities that a person with certain characteristics would be employed, probit models were used (see "What you should know about this study"). The analysis indicates that the occupational diversity—though not the size, nor the closeness—of someone's personal network is associated with the likelihood that they are employed. It is possible that having contacts among a narrower range of occupations could partially explain why recent immigrants are less likely to be employed (Chart 2 and Model 2 in Table A.1).

Personal networks are not the only factor associated with employment. Human capital, as reflected in such characteristics as education and age, is more strongly related than social capital to the probability of employment. More educated and older people are more likely to have a job. An individual's sex and marital status are also factors—married men are more likely to be employed and married women less likely. People who live in a large city are also more likely to be working than people who do not (Model 1 in Table A.1).

Characteristics connected to recent immigration, such as having arrived within the last five or ten years or being a member of a visible minority, are associated with a diminished probability of employment.

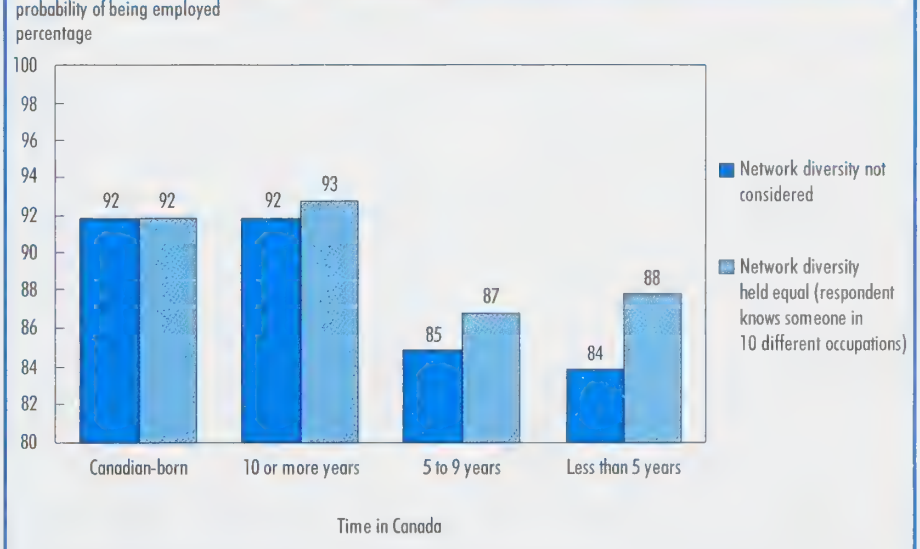
The data allow for the calculation of the probability that an individual with any particular combination of these characteristics will be employed.[18] For example, without considering the size or diversity of his personal network, the probability of employment for a 40-year-old married man with a college diploma who lives in a major city, has a mother tongue other than English or French and is a member of a visible minority group is about 92%, provided that he was born in Canada. The probability for an individual with the same characteristics who immigrated less than 5 years ago is about 84%; it is about 85% for an immigrant

Table 3 Strategies used by adults aged 18 to 75 to find their main job, by place of birth

	Foreign-born	Canadian-born†
	percentage	
Recruited by employer	7.6*	11.5
Contacted employer	21.4*	24.0
Self-employed	16.0*	12.2
Internet	10.3*	7.3
Help wanted ad	9.2	9.6
Close friend	13.0*	10.7
Another friend	8.0	7.2
Co-worker	2.0[E]	2.5
Parent	1.4[E]*	5.0
Another relative	4.2	3.6
On-campus recruitment	2.6[E]	2.5
Canada Employment Centre/government agency	1.8[E]	1.8
Recruitment agency/head-hunter	4.4*	2.4
Other	3.8*	5.0

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Note: More than one response was allowed.
Source: Statistics Canada, General Social Survey, 2008.

Chart 2 Recent immigrants have a greater probability of being employed when the diversity of their networks is the same as that of other Canadians



Note: Illustration is for a 40-year-old married male with a postsecondary diploma below the level of a university degree, who lives in a census metropolitan area, has a mother tongue other than English or French and is a member of a visible minority group.
Source: Statistics Canada, General Social Survey, 2008.

in Canada between 5 and 9 years. Immigrants who have been in Canada 10 years or more are about as likely to be employed as the Canadian-born (Chart 2).

Taking individuals with the same characteristics as above, but holding equal at 10 the number of occupations within which they have at least one contact, the probability of employment for those born in Canada is about 92% and about 88% for immigrants who arrived in Canada less than 5 years ago. This illustrates how recent immigrants have a greater probability of being employed when the diversity of their networks is the same as that of other Canadians (Chart 2).

Among the measures of personal networks that were tested, only diversity was associated with being employed. Neither the overall number of relatives, friends and acquaintances nor daily contact with them was associated with employment. The proportion of contacts considered close was actually connected with a slightly reduced probability of employment.

Social networks and personal income

For most people, earnings from employment or self-employment constitute most of their income and those without employment are likely to have lower personal incomes.[19] In order to focus on the association between personal networks and income, the following analysis includes only full-time, full-year workers.

As with employment, personal income levels vary according to characteristics such as age, sex, marital status, education, place of residence, mother tongue and visible minority status. Human capital variables (such as education and work experience) were associated with higher income, much as they were associated with a higher probability of having a job. When all these variables were held constant, the annual incomes of recent immigrants were almost one-third lower than those of the Canadian-born. Immigrants who had been in Canada between 5 and 9 years had incomes about 20% lower than the Canadian-born, while those in the country for 10 years or more had incomes similar to the Canadian-born (Model 1 in Table A.2).

Adding personal network characteristics to the mix, we find that neither the size of someone's personal network, nor frequent contact with friends and relatives, nor close or strong ties were associated with personal income. However, the diversity of workers' personal networks was positively associated with their annual income (Model 2 in Table A.2).

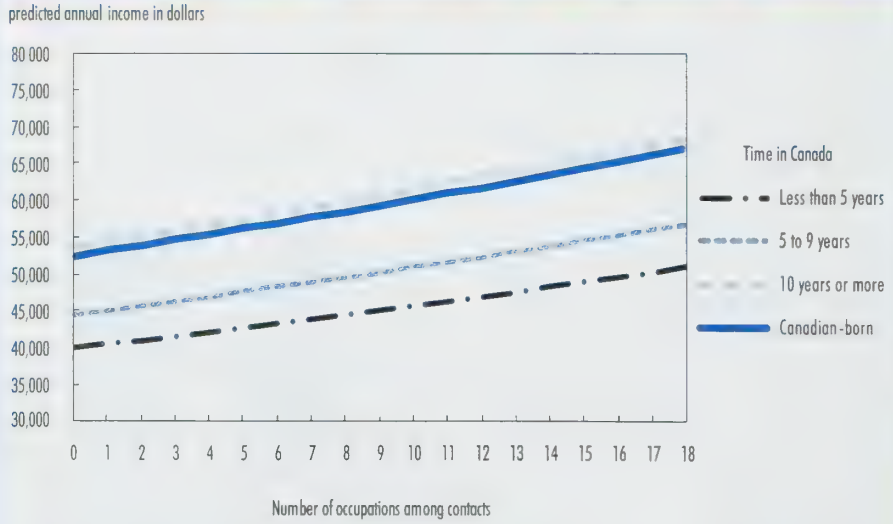
Each additional occupation within which an individual had a contact was associated with a 1.4% increase in personal income. Regardless of time in Canada or place of birth, people with more diverse networks had higher incomes (Chart 3). Indeed, the difference could be over $10,000 per year, depending on the number of contacts in different occupations. However, the effect of having a diverse network was not so large as to entirely explain the income differences between recent immigrants and other Canadians.

Summary

The social networks of immigrants are smaller and less diverse than those of the Canadian-born. However, data from the 2008 GSS suggest that the networks of immigrants may grow and diversify the longer they are in Canada.

Human capital, such as education and work experience, is an important determinant of employment and income but recent immigrants have been having some difficulty in quickly converting their educational advantages into economic ones. Considering social networks in conjunction with human capital may contribute to explaining some of the differences between the labour market experiences of newly arrived immigrants and those of other Canadians.

Chart 3 Workers with more diverse networks have higher incomes, regardless of immigration status or time in Canada



Note: Illustration is for a 40-year-old married male with a postsecondary diploma below the level of a university degree, who lives in a census metropolitan area, has a mother tongue other than English or French and is a member of a visible minority group.

Source: Statistics Canada, General Social Survey, 2008.

Simply having more contacts or close ties did not appear to be an advantage economically. Neither having more close friends and relatives nor having daily contact with them increased the probability of being employed for both recent immigrants and other Canadians. Having a higher proportion of close contacts actually seems to be linked with lower chances of having a job. Similarly, personal income was not significantly associated with the overall number of friends and relatives, how close one felt to them, or the frequency of contact with them.

There is an association, for all Canadians, between having a diverse network—contacts in a wide number of occupations—and being employed. Employment and personal networks are certainly connected, although in potentially complex ways. Individuals may meet people and develop more diverse networks through their job. More diverse networks may also help in finding a job or a better job.

The annual incomes of full-time employees are also related to the diversity of their network. Workers with contacts in a number of different occupations had higher incomes than workers with contacts in fewer occupations.

The less diverse personal networks of immigrants cannot entirely account for their relatively lower employment rates and incomes. However, the economic adjustment of immigrants may be related, at least in part, to making contacts in different occupations. Broadly speaking, it seems that the economic and social adjustments of immigrants are linked and occur hand in hand.

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16. Immigrants come to Canada under a number of programs which reflect the reasons for their admission. For example: the refugee program is intended for the protection in Canada of people who are outside their own country because of a well founded fear of persecution, the Family Class is intended to allow the unification or reunification of families in Canada, skilled workers are selected according to a points system that reflects their value to employers and the Canadian economy.

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19. The 2008 GSS collected information only on overall income and did not ask specifically about earnings. The analysis with respect to income focuses on those who reported that they earned most of their income from employment or self-employment. Excluded from the analysis were full-time students, those with no earned income or who worked less than full-time or less than 40 weeks in the previous year. Individuals who arrived in the country after 2006 are not considered in the analysis.

Table A.1 Models estimating the probability of being employed for all adults aged 18 to 75

	All adults aged 18 to 75	
	Without social networks	With social networks
	Model 1	Model 2
	probit coefficient	
Constant		
Intercept	-1.927*	-2.264*
In Canada		
Less than 5 years	-0.375*	-0.238*
5 to 9 years	-0.362*	-0.263*
10 years or more	0.043	0.083
Born in Canada†		
Age		
Age	0.153*	0.153*
Age squared	-0.002*	-0.002*
Sex		
Men	0.005	0.000
Women†		
Marital status		
Married or common-law women	-0.226*	-0.253*
Not married†		
Interaction of sex and marital status		
Married or common-law men	0.572*	0.571*
Education		
University degree	0.424*	0.312*
College diploma	0.294*	0.201*
Some postsecondary	0.141*	0.048
High school or less†		
Residence		
In census metropolitan area	0.040	0.091*
Not in census metropolitan area†		
Mother tongue		
Language other than English or French	-0.059	-0.056
English and/or French†		
Visible minority		
Member of a visible minority	-0.121*	-0.074
Not in a visible minority†		
Social networks		
Size of network		
Number of friends and relatives		0.000
Frequency of contact		
Maintain daily contact		-0.008
Don't maintain daily contact†		
Strength of ties		
Average percentage of contacts considered close		-0.002*
Diversity of network		
Number of different occupations among contacts		0.043*

† reference group
* statistically significant difference from the reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2008.

Table A.2 Models estimating income for those aged 18 to 75 who worked full time and received their main income from employment in the previous year

	All full-time workers[1]	
	Without social networks	With social networks
	Model 1	Model 2
	regression coefficient	
Constant		
Intercept	8.777*	8.607*
In Canada		
Less than 5 years	-0.307*	-0.274*
5 to 9 years	-0.207*	-0.165*
10 years or more	0.004	0.022
Born in Canada†		
Age		
Age	0.064*	0.065*
Age squared	-0.001*	-0.001*
Sex		
Men	0.285*	0.285*
Women†		
Marital status		
Married or common-law women	0.046	0.033
Not married†		
Interaction of sex and marital status		
Married or common-law men	0.185*	0.185*
Education		
University degree	0.598*	0.561*
College diploma	0.235*	0.201*
Some postsecondary	0.177*	0.146*
High school or less†		

	All full-time workers[1]	
	Without social networks	With social networks
	Model 1	Model 2
	regression coefficient	
Residence		
In census metropolitan area	0.130*	0.147*
Not in census metropolitan area†		
Mother tongue		
Language other than English or French	-0.033	-0.033
English and/or French†		
Visible minority		
Member of a visible minority	-0.162*	-0.151*
Not in a visible minority†		
Social networks		
Size of network		
Number of friends and relatives		0.003
Frequency of contact		
Maintain daily contact		0.010
Don't maintain daily contact†		
Strength of ties		
Average percentage of contacts considered close		-0.001
Diversity of network		
Number of different occupations among contacts		0.014*

† reference group

* statistically significant difference from the reference group at $p < 0.05$

1. Those who worked full-time and received their main income from employment in the previous year.

Note: The models predict the natural log of the income in the preceding year. Newcomers who arrived in the previous year are therefore not included.

Source: Statistics Canada, General Social Survey, 2008.

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Quality of personal networks: Does living alone make a difference?

by Mireille Vézina

Introduction

Family, friends and acquaintances play a fundamental role in our lives. When going through life changes,[1] the people in our personal networks provide tangible and psychological support. They give advice, sometimes help with everyday tasks, and provide opportunities to exchange information and resources.[2] In this article, the term "personal networks" refers to all the social relationships created and maintained in various contexts, such as family, neighbourhood, work, leisure or other activities. Relationships in virtual social networks are excluded.

Research has shown that social relationships or "social capital" are beneficial, and that having good networks of close friends and relatives is associated with better physical and mental health.[3] Some studies have even suggested that long-term mortality may be reduced.[4] Others have found that networks of acquaintances can play a vital role in finding a job or moving off social assistance[5] and in increasing employment earnings.[6]

Various federal and international organizations have recognized the potential of personal networks in complementing public policy development. Personal networks can reduce poverty or social exclusion, increase neighbourhood safety, provide care and assistance to sick relatives, boost participation in the labour market, and foster the social integration of immigrants.[7]

Personal networks can be especially important to people who live alone, since they often have to bear the cost of life's uncertainties on their own. Simply having a spouse or partner can help expand someone's personal networks, thereby improving their well-being. Some studies have even found that people who are part of a couple—and especially men—are happier and less likely to have mental or physical health problems, and have a longer life expectancy.[8] Since people living alone are much more likely to have lower incomes than those living in a couple,[9] support from their personal networks is often critical.

In this article, the personal networks of 25- to 64-year-old adults who live alone are compared with those of adults living in a couple, with or without children. Preliminary analyses revealed that the presence of children has little effect on the composition of personal networks. Therefore, in this analysis, a separate category based on the presence of children is not used (except in Table 1 for information only). The same is true for the marital status of people who live alone: in terms of the size of—or satisfaction with—their personal networks, single people who have never been married are not noticeably different from those who are divorced or separated.

The article begins by describing the personal networks of people living alone or in a couple, with a focus on three aspects: 1) the network size or scope, as measured by the number of close relatives, friends and acquaintances; 2) the frequency of contact; and 3) the extent of a feeling of social loneliness, that is, the perception of being surrounded or not by trustworthy people on whom one can rely in times of need.

These three aspects are then combined to create an overall indicator of personal network quality. Regression analysis is used to determine the degree to which the personal networks of people living alone differ from those of people living in a couple when other factors are taken into account, such as age, sex, education, income, dwelling status, employment, place of residence, place of birth and participation in organized activities.

What you should know about this study

Data source

This article uses data from Statistics Canada's 2008 General Social Survey (GSS), which collected data on social networks. Approximately 20,000 Canadians aged 15 and over who live in private homes in the ten provinces took part in the survey.

Study population

The study population includes people aged 25 to 64 who live alone or in a couple, with or without children. The sample consisted of 15,600 persons representing 15.8 million Canadians.

This age range was chosen because young adults under age 25 may not have completed their education and their sociability profile may differ once they enter the labour market. As well, many people aged 65 or over are retired or may live alone for different reasons than younger people (such as widowhood). Limiting the age group provides a more homogeneous study population. For more information on the personal networks of seniors, see "Senior Women" in *Women in Canada: A Gender-based Statistical Report*, 2010-2011, Statistics Canada Catalogue no. 89-503-X.

Definitions

Various aspects of personal networks are examined in this study: **network size or scope** (the number of people in them), **frequency of contact** (face-to-face and telephone contact) and **feeling of social loneliness** (the perception of being surrounded or not by trustworthy people on whom one can rely in times of need).

Network size or scope: A scale was created using information on the number of close relatives, close friends and acquaintances, then respondents were divided into four groups of similar size (quartiles). The scale measures the size of personal networks. Respondents with the smallest personal networks were placed in the lowest quartile.

Frequency of contact: Frequency of contact is measured on a scale that combines face-to-face and telephone contact with close relatives on one hand, and with friends and acquaintances on the other.

Social loneliness indicator: Social loneliness is measured on a scale that combines responses to three statements in the GSS: "There are plenty of people I can rely on when I have problems," "There are many people I can trust completely," and "There are enough people I feel close to." The possible responses were "no" (0 points), "more or less" (0.5 points) and "yes" (1 point). To create the social loneliness scale, the points for each statement were totalled (0, 0.5 or 1). Respondents scoring 1.5 points or less were considered to have a strong degree of social loneliness, because they had answered "no" or "more or less" to all three statements. Analyses have shown that a loneliness scale created in this way, using the three variables, is valid and reliable.[1]

Overall personal network quality: To examine the profile of the population having personal networks of poor or good quality, the three indicators above (network size or scope, frequency of contact and degree of social loneliness) were combined. These combined variables were then used to create a scale of overall personal network quality.

The population was divided into quartiles, with those in the lowest quartile considered as having poor quality personal networks and those in the upper quartile as having good quality ones.

Statistical models

Two logistic regression models were used to determine the degree to which people living alone were more likely than those in a couple to have poor or good quality personal networks, while accounting for the potential effects of other factors.

In the first model, the dependent variable was the likelihood of having poor quality personal networks and, in the second model, the likelihood of having good quality ones.

The results of the models were analyzed using odds ratios. These allow the researcher to measure the degree to which living alone or in a couple is linked to having poor or good quality personal networks, when other factors are held constant (that is, controlling for the effects of other variables that may be associated with the likelihood of having poor or good quality social networks).

Data limitations

Personal networks change over time, depending on life cycle stages and transitions. The information collected by the GSS describes personal networks at a specific time in the lives of respondents. Therefore, it is impossible to determine the impact of status changes—for example, moving from living in a couple to living alone—on the composition of someone's personal networks. Furthermore, it is not possible to determine from the data how the length of time spent living alone or in a couple affects someone's personal networks.

What you should know about this study (continued)

People who have lived alone for many years may have larger personal networks than those who have done so for a short period as a result of a life event such as a relationship breakdown.

1. de Jong Gierveld, Jenny and Theo van Tilburg. 2006. "A six-item scale for overall emotional and social loneliness: confirmatory tests on survey data." *Research on Aging*. Vol.28, no. 5.

Smaller family networks for people living alone

Family is the first source of social bonds. Although family ties are "inherited," they are the foundation of social relationships, solidarity and mutual support.

According to the 2008 GSS, people living alone were less likely than those living in a couple to say that they felt close to a sizable number of their relatives (feeling close meaning that they felt at ease and could speak freely with them, and could call on them for help). In 2008, 70% of people aged 25 to 64 who lived alone said that they felt close to 3 or more relatives, compared with 81% of those living in a couple (Table 1). People living alone were also more likely to have fewer relatives (2 or less) to whom they felt close (30% of people living alone, compared with 19% of those living in a couple).

People living in a couple usually have access to their spouse or partner's family network in addition to their own, which increases their opportunities for establishing close ties. From this perspective, people living in a couple would appear to have an "advantage" when it comes to the potential for developing meaningful relationships with relatives.[10]

Persons living alone have approximately the same number of close friends . . .

Friendships vary in their intensity. The GSS distinguishes between close friends and acquaintances. Close friends are those with whom one feels at ease and can speak freely, and on whom one can call for help. In short, they are the most trusted friends who provide personal and emotional support in times of need. As far as the number of close friends is concerned, there was little difference between the personal networks of people living alone and those of people living in a couple—in both groups, a slight majority (55%) had 3 to 8 close friends. However, people living in a couple (19%) were slightly more likely than those living alone (15%), to report having 9 or more close friends (Table 1).

. . . but have fewer acquaintances

Acquaintances are also important because they help reduce social isolation and may provide more focused or specialized help. People living alone were less likely than those living in a couple to have a large number of acquaintances outside their circle of close friends. Specifically, 44% of those living alone had 20 or more acquaintances, compared with 52% of those living in a couple. People living alone were also slightly more likely to have relatively few acquaintances. Having a spouse or partner may increase a person's chances of meeting new acquaintances.

To measure the overall size of personal networks, a scale was created that combined data on the number of close relatives, close friends and acquaintances, which was then divided into quartiles.[11] The results show that 31% of those living alone had a small overall network, compared with 21% of those living in a couple. At the opposite end of the scale, 25% of those living in a couple had a very large overall network, compared with 16% of those living alone.

People who live alone are in more frequent contact with their friends

Regardless of the size of someone's personal networks, time constraints may limit how frequently they keep in contact. Someone with children and a spouse or partner at home has different schedules and responsibilities than someone living alone. In fact, people living alone are in slightly more frequent contact with friends or acquaintances—81% of those living alone said that they met or phoned a friend at least once a week, compared with 77% of those living in a couple. The gap was wider in terms of daily contact: 30% of those living alone met or spoke with friends or acquaintances every day, compared with 21% of those living in a couple.

People living in a couple, while more likely to have large family networks, were not much different from those living alone in terms of how frequently they were in contact with close relatives. In fact, both groups were almost equally likely to meet or speak with close relatives at least once a week (Table 1).

Family status had little effect on people's satisfaction with their frequency of contact: approximately 85% of both those living alone and those living in a couple said that they were satisfied with how frequently they were in contact with relatives, friends and acquaintances.

Neighbours

Information collected through the GSS describes personal networks in general but does not provide details on ties to particular people in a network, except for neighbours.

Neighbours can provide certain types of practical, occasional help that relatives and friends cannot—in part because relatives and friends don't necessarily live in the same neighbourhood. Knowing the neighbours can also foster a sense of community. People living alone were more likely than those living in a couple to say that they didn't know anyone in their neighbourhood well enough to ask for a favour (20% versus 11%). People living alone were also less likely than those living in a couple to say that they could ask 6 or more people in their neighbourhood for a favour. One reason may be that those who live alone tend to reside in the central areas of large census metropolitan areas (CMAs), where people move more often.[1]

1. In 2006, the percentage of lone-parent families in central municipalities of CMAs (18.5%) was higher than the percentage in outlying municipalities (14.0%). The same pattern holds for persons living alone (Statistics Canada, 2006 Census of Population). Intra-metropolitan mobility flows primarily from central municipalities to outlying municipalities.

Percentage of people aged 25 to 64 living alone or in a couple, by number of people in the neighbourhood of whom the respondent could ask a favour

Number of people in the neighbourhood of whom the respondent could ask a favour	Family status	
	Living alone[1]†	Living in a couple[2]
	percentage	
None	19.6	10.5*
1 to 5	57.6	55.4*
6 or more	22.8	34.1*

† reference group
* statistically significant difference from reference group at $p < 0.05$
1. Includes lone-parents.
2. Includes couples with or without children.
Source: Statistics Canada, General Social Survey, 2008.

People living alone experience greater social loneliness

The size of one's personal networks may mean different things to different people. Some may have smaller than average networks and be completely satisfied with the number of members in them. Others may have many friends and acquaintances they are frequently in touch with yet still experience social loneliness.[12]

In general, people living alone are less likely to be satisfied with the size of their networks. Specifically, 79% of those living alone thought that there were enough people to whom they felt close, compared with 86% of those living in a couple. In addition, 74% of those living alone said that there were many people on whom they could rely on in times of need, compared with 80% of those living in a couple. Lastly, people living alone were less likely than those living in a couple to say that there were many people whom they trusted completely (58% versus 68%). These three aspects of how someone can perceive their personal networks were combined to create an indicator of social loneliness. The results showed that 21% of people living alone had a strong feeling of social loneliness, compared with 14% of those living in a couple (Table 1). For more information on the social loneliness indicator, see "What you should know about this study."

Quality of personal networks lower for people living alone

An overall indicator of personal network quality was created by combining the three aspects of personal networks described above, namely, network size (close relatives, friends and acquaintances), frequency of contact and feeling of social loneliness. The higher the score on this scale, the higher the quality of personal networks.

The percentage of people living alone who reported poor quality personal networks (32%) was higher than that of people living in a couple (23%) (Chart 1 and Table 2). Conversely, the percentage of people living alone who reported good quality personal networks (24%) was lower than that of people living in a couple (31%). As for networks of fair or average quality, there were only small differences between people living alone and those living in a couple.

A number of factors other than living alone or in a couple were associated with having poor quality personal networks, for example, having a lower income, renting, and living in a census metropolitan area. However, when these factors were held constant in a logistic regression

Table 1 Percentage of people 25 to 64 years of age, by personal network characteristics and family status, Canada, 2008

	Family status		Family status by presence of children			
			Living alone		Living in a couple	
	Living alone[1]†	Living in a couple[2]	Without children†	With children	Without children†	With children
	percentage					
Number of relatives to whom the respondent feels close						
None	5.3	2.6*	6.1	3.9[E]*	2.8	2.5
1 or 2	25.1	16.0*	25.3	24.6	16.8	15.4
3 or 4	26.7	22.7*	27.0	26.0	23.4	22.3
5 to 8	24.6	29.7*	24.2	25.3	29.0	30.1
9 or more	18.4	29.1*	17.4	20.2	28.0	29.7
Number of close friends						
None	6.2	5.1*	6.7	5.5[E]	5.2	5.1
1 or 2	23.4	21.3*	21.4	26.9*	20.8	21.6
3 or 4	28.0	27.2	27.4	29.2	27.2	27.2
5 to 8	27.3	27.5	28.7	25.0*	27.6	27.4
9 or more	15.0	19.0*	15.9	13.5	19.2	18.8
Number of acquaintances						
None	8.1	5.5*	8.1	8.1	5.9	5.2
1 to 7	22.1	17.5*	22.0	22.3	18.0	17.1
8 to 19	25.4	25.3	24.8	26.5	24.9	25.5
20 to 30	22.4	26.0*	22.5	22.3	25.5	26.3
More than 30	22.0	25.8*	22.7	20.9	25.7	25 9
Overall network size in quartiles						
Small	30.5	21.3*	30.5	30.5	21.7	21.0
Medium	28.3	26.0*	27.2	30.2	26.3	25.8
Large	24.9	27.5*	25.1	24.5	26.9	27.9
Very large	16.4	25.3*	17.2	14.9	25.2	25.3
Frequency of contact with relatives[3]						
Every day	26.0	22.6*	24.0	29.4*	23.6	22.0
Once a week or more	49.7	55.1*	51.5	46.5*	54.5	55.5
1 to 3 times per month	16.5	17.5	16.1	17.2	17.0	17.8
Not in the last month[4]	7.9	4.8*	8.4	6.9	4 9	4.7
Frequency of contact with friends and acquaintances[5]						
Every day	30.2	21.3*	29.7	31.0	19.4	22.5*
Once a week or more	50.9	55.5*	52.4	48.5	56.0	55.2
1 to 3 times per month	14.7	19.9*	13.7	16.4	21.2	19.1*
Not in the last month[6]	4.2	3.3*	4.3	4.2[E]	3.4	3.3
There are enough people to whom the respondent feels close						
Yes	79.2	86.1*	79.8	78.1	87.6	85.0*
More or less	10.8	9.0*	10.4	11.7	7.8	9.7*
No	10.0	5.0*	9.8	10.3	4.6	5.3
There are many people the respondent can rely on in times of need						
Yes	74.3	80.0*	74.5	73.7	82.4	78.3*
More or less	13.8	11.7*	13.2	14.6	10.5	12.6*
No	11.9	8.3*	12.3	11.6	7.1	9.2*

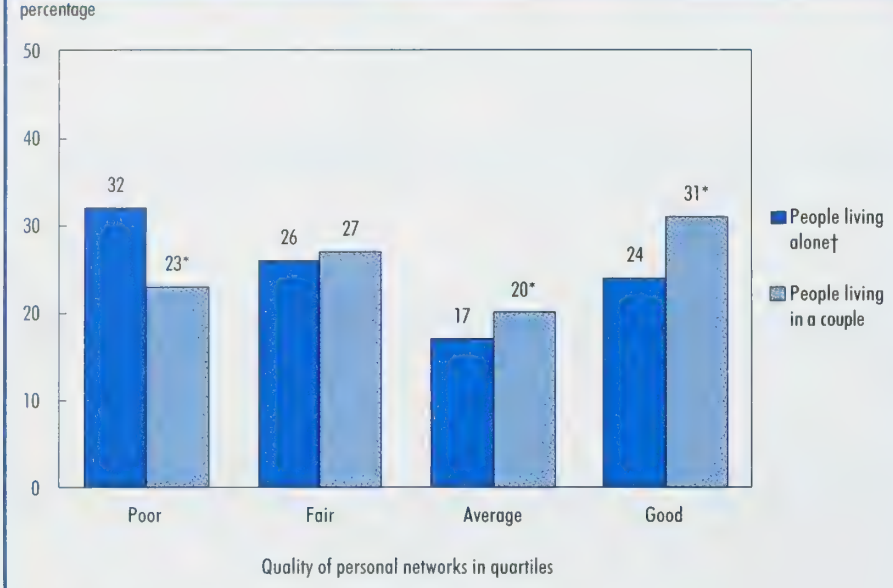
Table 1 Percentage of people 25 to 64 years of age, by personal network characteristics and family status, Canada, 2008 (continued)

	Family status		Family status by presence of children			
			Living alone		Living in a couple	
	Living alone[1]†	Living in a couple[2]	Without children†	With children	Without children†	With children
	percentage					
There are many people whom the respondent trusts completely						
Yes	58.2	67.5*	59.0	56.6	69.8	66.0*
More or less	20.7	18.0*	21.0	20.1	17.2	18.4
No	21.1	14.5*	20.0	23.3	13.0	15.6*
Feeling of social loneliness						
Slight	52.3	61.5*	52.7	51.7	64.5	59.6*
Moderate	26.7	24.2*	27.3	25.6	23.2	24.8
Strong	21.0	14.4*	20.0	22.7	12.4	15.6*

† reference group
* statistically significant difference from reference group at $p < 0.05$
1. Includes lone-parents.
2. Includes couples with or without children.
3. Contacts with relatives include face-to-face meetings and phone calls in the last month. This category excludes family members who live with the respondent.
4. Includes people with no living relatives.
5 Contacts with friends and acquaintances include face-to-face meetings and phone calls in the last month.
6. Includes people who declared having no friends or acquaintances.

Source: Statistics Canada, General Social Survey, 2008.

Chart 1 People living alone are more likely to have poor quality personal networks



† reference group
* statistically significant difference from reference group at $p < 0.05$
Source: Statistics Canada, General Social Survey, 2008.

model, people living alone remained more likely than those living in a couple to have poor quality personal networks (an odds ratio of 1.46) (Table 2).

As well, with all other factors held constant, living alone significantly reduced the probability of having good quality personal networks (Table 2).

Regression analysis also showed that being male, being over 35 or having a lower income increased the likelihood of having poor quality personal networks.

Conversely, owning one's home, being Canadian-born, having a job, living in a less populated area or participating in organized activities increased the likelihood of having a good quality personal network.

Table 2 Quality of personal networks by selected characteristics of people aged 25 to 64, Canada, 2008

	Quality of personal networks[1]					
	Poor[2]			Good[3]		
	percentage	odds ratio		percentage	odds ratio	
Family status						
Living alone	32*	1.54*	1.46*	24*	0.74*	0.78*
Living in a couple†	23	1.00	1.00	31	1.00	1.00
Sex						
Men	28*	....	1.85*	27*	...	0.68*
Women†	22	....	1.82	31	...	0.70
Age group						
25 to 34†	18	...	1.00	35	...	1.00
35 to 49	26*	...	1.82*	29*	...	0.70*
50 to 64	28*	...	1.93*	27*	...	0.65*
Education						
University degree†	22	...	1.00	32	...	1.00
Postsecondary other than university	24*	...	1.11	29*	...	0.92
High school diploma or less	30*	...	1.15	27*	...	0.97
Personal income						
Less than $15,000	31*	...	1.77*	24*	...	0.59*
$15,000 to $29,999	28*	...	1.62*	25*	...	0.62*
$30,000 to $49,999	25*	...	1.41*	28*	...	0.70*
$50,000 to $79,999	21	...	1.18	33	...	0.87
$80,000 or more†	19	...	1.00	35	...	1.00
Not stated	28*	...	1.54*	29*	...	0.80*
Tenure of dwelling						
Renter†	33	...	1.00	23	...	1.00
Owner	23*	...	0.81*	31*	...	1.21*
Employment						
Unemployed†	30	...	1.00	26	...	1.00
Employed	23*	...	0.76*	31*	...	1.16*
Place of residence						
Census metropolitan area (CMA) with population over 1 million†	28	...	1.00	26	...	1.00
Other CMA	22*	...	0.78*	31*	...	1.20*
Census agglomeration	23*	...	0.82*	32*	...	1.27*
Other area	22*	...	0.76*	34*	...	1.37*
Place of birth						
Outside Canada†	36	...	1.00	19	...	1.00
In Canada	22*	...	0.57*	32*	...	1.76*
Involvement in organized activities[4]						
No†	33	...	1.00	22	...	1.00
Yes	18*	...	0.50*	36*	...	1.81*

† reference group

* statistically significant difference from reference group at $p < 0.05$

1. This indicator is a scale that combines data on three aspects of social networks, namely network size, frequency of contact and feeling of social loneliness.
2. This category corresponds to the quartile (25%) of respondents with the lowest scores for overall personal network quality.
3. This category corresponds to the quartile (25%) of respondents with the highest scores for overall personal network quality.
4. Includes political parties and groups; sports and recreational organizations; cultural, educational and hobby organizations; religious-affiliated groups; school groups; neighbourhood, civic and community associations; and service clubs and fraternal organizations.

Source: Statistics Canada, General Social Survey, 2008.

Summary

The personal networks of people living alone differ from those of people living in a couple. People living alone have fewer close ties with relatives and fewer acquaintances. These differences may be partly because people living in a couple have more opportunities to broaden ties with family and extend their network of acquaintances.

However, the contribution of a spouse or partner's network of friends does not appear to significantly affect the number of close friendships. In fact, people living alone and those living in a couple have similar numbers of close friends in whom they can confide. Those living alone are a little more likely to be in frequent contact with their friends. However, they are also more likely to experience a strong feeling of social loneliness than people living in a couple.

When the data on their network size, frequency of contact and degree of social loneliness are combined, people living alone are more likely to have poor quality personal networks.

Further analysis using logistic regression shows that, even when taking into account several risk factors, people living alone remain more likely to have poor quality personal networks, and those living in a couple, to have good quality ones.

These results are especially important given the currently rising number of people who live alone and whose economic circumstances are less secure than those of people living as part of a couple.

Mireille Vézina is an analyst in the Social and Aboriginal Statistics Division, Statistics Canada.

1. For more information on the role of personal networks during life changes, see: Keown, Leslie-Anne. 2009. "2008 General Social Survey report: Social networks help Canadians deal with change." *Canadian Social Trends*. No. 88. Statistics Canada Catalogue no. 11-008-X.
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9. In 2009, of those under 65 living alone, 30% of men and 33% of women had low income. By contrast, only 5% of those married and without children had low income (Survey of Consumer Finances, no. 3502; Survey of Labour and Income Dynamics, no. 3889; "Families in low income, by economic family type, 2006 constant dollars, annual," CANSIM table 202-0804).
10. The nature of the ties with people in someone's personal network and how they were introduced to those people cannot be determined from the GSS data. Therefore, the number of ties created through the personal network of someone's spouse or partner cannot be determined.
11. Information on neighbours was not considered because neighbours who were also friends would be counted twice.
12. Green, B. L. and A. Rodgers. 2001. "Determinants of social support among low-income mothers: a longitudinal analysis." *American Journal of Community Psychology*. Vol. 29, no. 3.

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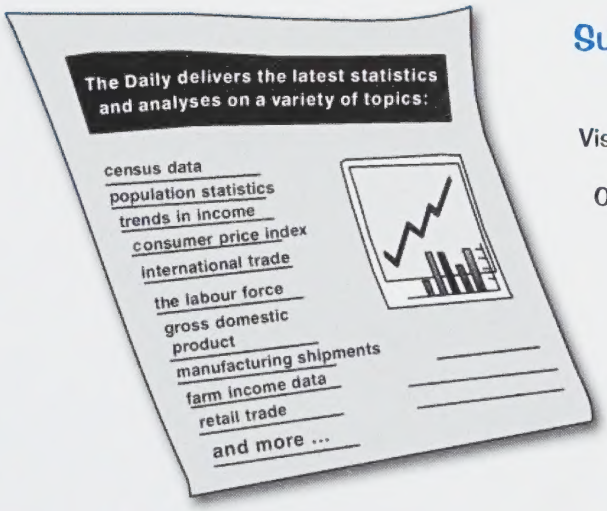

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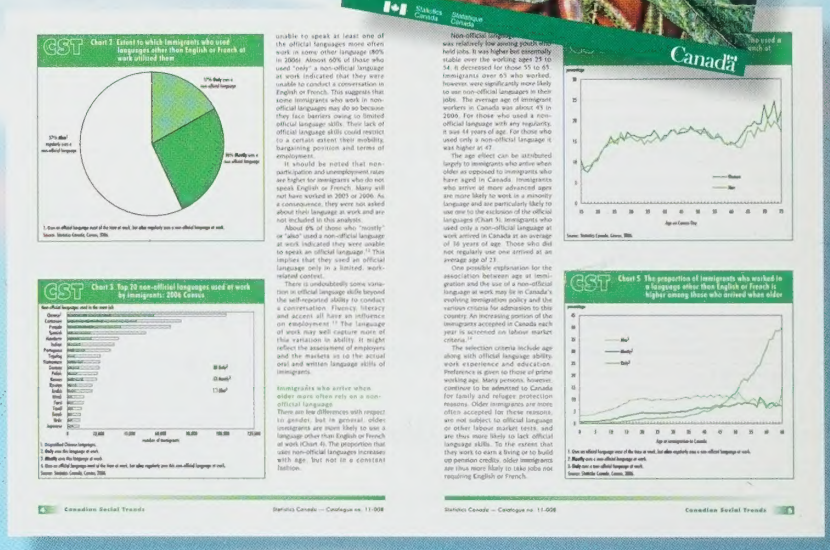

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